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THE
NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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MONTHLY.

SIMON BROWN, S. FLETCHER, } Editors.

AN OLD FRIEND, IN A NEW DRESS.

ENCOURAGED by the unprecedented success of the *weekly* New England Farmer, since the first of January, 1865, the proprietors now resume the publication of the *monthly edition* of the New England Farmer, and intend to make it one of the most valuable and popular magazines of its kind in the country. As will be seen, it is enlarged beyond the size of the old series, is printed on better paper, and will be continually improved by adopting such changes as progress in the art of printing may present. Especial pains will be taken to condense its articles, so as to introduce as much variety as possible upon all the leading branches of agriculture, such as the location and construction of farm buildings; the reclamation of lands; the science and practice of drainage; the modes of seeding lands; the cultivation of orchards; gardening, for domestic and market purposes; the raising of small fruits; bee culture, and the principles of breeding stock, and the modes of feeding and tending, so as to secure the largest amount of growth and profit, with the greatest economy.

To these will be added notices of the introduction of new and valuable farm implements and machinery, such as will be supposed to enable the farmer to produce larger and better crops than heretofore, at a less cost of time and labor. Great as has been the advance in these things during the ten years just past, others of much value, if not of equal importance, will undoubtedly succeed them. As the cost of clothing, groceries, and other articles which the farmer does not produce, increases, so must the products of his fields increase,—but as this will not, probably, be in an equal proportion, he must be constantly advised of the means of *producing at the least possible cost*, so as to avail himself of all practical labor-saving helps as they are introduced.

The Monthly Farmer will also be a suitable medium through which to disseminate the improvements which are continually introduced in domestic industry,—in the *house*, as well as in the field. No farm is entirely well conducted, where the *kitchen* is not well managed. The importance of this department of labor has been somewhat overlooked. Valuable receipts, notices of new things intended for the kitchen, larder, wash-room, dairy, and other portions of the house, are frequently given in the weekly journal, but before they can fairly be considered, the paper becomes lost or destroyed. It is too ephemeral in its nature. But the *monthly* issue not only disseminates information, but brings it in a form where it can be preserved

and referred to in future years with readiness and ease.

The family, for instance, wishes to avail itself of some appliance that operates well and saves the strength of women, already overtasked. The notice of such appliance comes when the attention is engrossed with present and oppressive cares, and little notice is taken of it. By-and-by a more favorable moment occurs, and the mind reverts to the subject, but the paper containing it is gone, and with it all the necessary details. The *monthly* issue, however, being in the form of a book, is preserved without trouble, and on referring to it the complete index which it contains leads at once to the subject desired. Such a work increases in value as it increases in age. Indeed, a gentleman who has the entire volumes of the old series, informs us that his copies go about his town much as does a winnowing mill where there is but one in a neighborhood! If a well is to be dug, a cistern built, a field drained, barn or house erected, garden or grounds laid out, horses trained or shod, or any other work to be done, he says some information may readily be found in the MONTHLY NEW ENGLAND FARMER in relation to it.

Such *is* the fact,—and this information is drawn from a large number of the most practical and intelligent persons—men and women—in the community.

The MONTHLY FARMER for the year 1860, has *five hundred and seventy-six* broad and beautiful pages, printed in large, clear letters, and treating at greater or less length, upon between *two and three thousand* subjects, or illustrating or elucidating the same topics in different ways and by different persons. There is scarcely a subject of interest to the farmer, gardener, horticulturist, mechanic, housewife, philanthropist, or teacher, but is noticed in these pages, and may readily be referred to by the aid of the ample index given at the opening of the volume!

In addition to this mass of matter and information, there are also nearly *one hundred illustrations*, not pictures picked up here and there, merely to please the eye and fill a page; but engravings that truly illustrate the subject in hand, made expressly for the work, and at a very considerable outlay of money, as the designs of fruits, cattle and buildings will at once show. It is intended to make every succeeding volume as good as the volume for 1860, and better if possible.

The old series of the MONTHLY FARMER contains *fifteen* volumes. These have been so popular that not a single entire set can be found for sale. The new series will come sufficiently near them in size to preserve uniformity and a good appearance upon the shelf, and together will make the most valuable library the farmer can possess. They will be worth more as books of reference, than they will be as mere current reading. We suggest, therefore, that every copy taken be carefully laid aside for binding, and preserved as a record of agricultural practice and progress at the time at which they were written and printed.

FARM WORK FOR JANUARY.

ACCOUNTS.—The first work in the opening of the New Year should be to close all accounts, if, it were not done in December. Nothing tends to prosperity and harmony among neighbors more than a perfect understanding between them in matters of business. When these all go smoothly, there will usually be good feelings and reciprocal kindness in the neighborhood. Delays are dangerous.

THE STOCK.—Allow no sloven to have care of the stock. Fodder is too valuable this year to be wasted. Feed a little at a time, beginning with the poorest fodder in the morning, and end with it at night. Let the *sheep* have a choice of remaining under cover or going out, as they please. If the weather is cold and *damp*, they will generally prefer to be under cover. If clear and cold, even if the thermometer is below zero, they usually prefer the open air. Do not crowd them anywhere, either in pen or yard. They love freedom. Give them a *variety* of food, if possible. No animals like it better. They will thrive more on a *variety*, if a portion of it be less nutritious, than on one kind of rich food. Let them have access to pure water. They like to drink very slowly and be a considerable time about it. Be friendly with them, using no harsh gestures or language, and they will like you all the better for it, and bring you heavier lambs and more wool.

Let the *colts* have a roomy and sunny yard to ramble and roll in, and warm quarters for stormy weather. Have no ditches, old fences, or cast-off wheels, carts, sleds or rubbish of any kind for them to tumble over and scar their

bodies or break their legs. Feed and tend them well, and they will make your purse plethoric, by-and-by, as prices for horses are going now.

Look after the *yearlings* and *two-year-olds* carefully. A warm place, good hay and a little grain, will make you fond of showing them to your neighbors occasionally.

The Poultry.—This branch of farm stock probably pays more for the money invested in it than any other. Treat the poultry fairly and the poultry will treat you to flesh and eggs accordingly. They need an airy, dry, sunny place, where they are protected from winds and dampness, and can bask in the winter sunshine, whenever it condescends to come into their windows. They like *variety* as well as sheep. Boiled potatoes, mashed with corn and cob-meal, dry corn, oats, barley and butchers' scraps are all excellent. Corn and *cob* meal is better than clear meal, as they are apt to get too fat on the latter.

Swine.—Look out for the store pigs. They are sometimes "nasty creatures," but they like good victuals and warm nests notwithstanding. There is no profit in keeping them meanly.

The House.—Pile up the first snow about the house, and you will save fuel by it. It is a fine blanket.

January is the starting point on our journey for the year. If we begin well, we shall be more more likely to end well. Let us try it this year. Certainly, agreed, all round.

ACQUAINTANCESHIP.

Fifteen years have now gone by, friends, since we first went forth to meet you in your fields and by your firesides, and began to record our experiences in the great art of farming, and to collate for your pleasure or profit the opinions of those among you who have communicated to these columns.

The profit has been mutual. They certainly have been years of progress and profit to us.

You have been teachers in turn, not only in the excellent articles you have steadily furnished, but in the examples so often witnessed in your agricultural practice, and in the sound opinions often expressed in your fields and around your firesides, during our numerous visits among you.

Our whole intercourse with you has been pleasant. Our opinions have been sincerely given, and have been received for all they were worth. They have sometimes been controverted, but in that spirit of comity which could give no offence.

Most of the articles we have presented have grown directly out of our daily practice on the farm, either in personal manipulations, or in the supervision of others. They have not been transcriptions from books, nor the theories of those who write from the representations of others, but, as every practical farmer will see, remind one of the soil in every line. We *practice* what we preach.

That these pleasant relations may continue, and that the *New Year* upon which we have entered may be one of great moral and agricultural progress, is our sincere wish.

Ferocious Bees.—On driving into his yard with a load of wood, a Mr. Berry, a farmer in Madison county, Illinois, was met, as we learn by the *Prairie Farmer*, by an enormous cloud of bees, and before he could possibly turn his team out of the way, they covered himself and his horses to the depth of two or three inches, stinging both horses to death in a few minutes, and greatly endangering his own life. His men hearing his trouble came to his relief and carried him to a neighbor's house. A physician was called, and by the use of proper antidotes, his life was saved. They also attacked the family in the house and they had to save themselves by flight. Mr. B. is an old and very successful bee raiser, and could handle them in ordinary management without even getting a sting.

Apples in New Hampshire.—Last October we published a paragraph relating to the fruit crop in New Hampshire. Since that time we have visited two or three of the eastern counties of that State, and find that in these counties there has been from one-third to one-half of a good crop of apples. In June there was little prospect of so favorable a result. Then, insects were abundant, and the young fruit was falling from the trees in great numbers. The apples which we saw were fairer than they are in Massachusetts, and more highly colored. The best Baldwins were selling for $4 to $4.50 per barrel. Considerable cider was being made, for which there was a ready demand on every hand, at rather high prices.

WINTERING STOCK.

Good country hay is now selling in Boston for thirty dollars a ton, and Eastern pressed hay for twenty-six dollars and upwards. Good English hay sells at twenty-two to twenty-six dollars in the country towns in the vicinity of Boston, where it had averaged about sixteen dollars per ton for many years previous to the rebellion. Corn meal is now retailed at $2.70 a bag, and all other articles ordinarily used for feeding neat stock and horses in the winter, are proportionately high.

Under this condition of things, two points of interest to every farmer ought to be carefully considered.

The first of these is, that farming cannot be profitably conducted in New England without the use of considerable manure,—and that the natural, sure, and economical mode of obtaining manure is by keeping stock. Good, progressive farming, ought to enable us to *add one animal* to our herd of neat stock every year, and feed them all well. This would be evidence of progress and thrift. If we kept five last year, keep six this, and so continue to do until every acre is brought to its maximum power of production. Under such a practice of farming, there would be no want of manure after the system was once in operation, and, with careful culture, there would be almost a certainty of good crops, whatever the season might be. Seed time and harvest is promised to us, and the promise has held good for ages, and will so continue. With our part judiciously performed, there should be no apprehension that the result will not be favorable. We have no recollection of a season when the bountiful soil of New England would not produce sufficiently for all her children, provided their labor had been given to its cultivation.

The next point of interest is, how shall we sustain our stock, and still spare some portion of the hay and grain to exchange for cash to meet bills for taxes, groceries, clothing, and a thousand other incidental expenses that come into every family? Let us see.

The hay crop of last summer was scarcely an average one, but was generally well preserved, and is, therefore, more than ordinarily nutritious. As a partial compensation for lack of quantity, the fall feed has been abundant and good, so that cattle will come to their stalls this fall in good condition. We have rarely noticed them appearing so well. The corn crop is also good; the corn fodder, buts and husks, are unusually heavy.

The farmer can bring his stock to their winter quarters this fall, therefore, under quite favorable circumstances. It now remains with him so to feed out what he has so carefully laid up, as to take his stock through the winter in a growing condition, on the coarse and less valuable portions of his crop, and leave a surplus for market, or to be fed to fattening animals, or milch cows, which would be only another, and perhaps better, form of selling the hay.

In the first place, we earnestly recommend the *cutting of as much of the fodder* as possible—the whole of it, English hay and all, as far as it can be done consistently with other circumstances. We will not pause here to give special reasons for this recommendation, but will make them the subject of another article hereafter.

In most cases the farmer has a *variety of fodder*, such as meadow hay of two or three qualities, herdsgrass, redtop, oat, barley, or rye straw, and the top stalks of corn, and buts, and husks. Either of these, except the English hay, fed alone would soon impair the appetite of the cattle, and they would fail to eat it. If the coarse kinds of fodder were changed from day to day, the stock would select the best portions, push about and breathe on the remainder and then utterly refuse it, unless they were kept very short—too short to grow fat or yield any valuable product. But if all kinds are mingled and run through a hay cutter, the whole will not only be eaten by the stock, but they will thrive upon it in a remarkable degree.

Our practice has been to use about equal portions of the various kinds of fodder, cut and mixed, thrown into a heap, sprinkled with water, and then thrown over, adding a little salt as the process is continued. When the weather is so cold as to prevent fermentation, some kind of meal is added when the salt is, and the heap is allowed to remain a day or two before commencing to feed from it. But if the weather is warm, the meal is mixed with it as it is used.

If the farmer has raised grain of any kind, it is cheaper to use a portion of it in this way, ground into meal, than to sell it,—selling a portion of the fodder instead—if he must dis-

pose of one or the other. By mixing the meal with the cut fodder, the whole becomes flavored with the taste and smell of the meal, so that the cattle will eat every particle of the hay and straw, and leave only a few of the hard joints of the corn buts. Fed regularly three times a day—about as much as they will readily eat at each foddering—horses, oxen and cows thrive as well as ever they did on as much uncut English hay and the same quantity of grain. Every ton of good, sweet corn fodder fed in this way is worth, in our opinion, nearly as much as a ton of English hay. The cutting is done at any convenient moment, but especially in stormy weather, when several hundred pounds are cut in a single day, sprinkled, salted, and piled up.

A most ample experience in this mode of feeding stock, has convinced us beyond a doubt, that it is a much cheaper mode of using winter fodder than the old one, of feeding it out long and unmixed to the cattle.

All kinds of stock *like a variety of food*, and thrive upon it better than they will upon a single kind, even if a portion of that variety is not so nutritious as the one kind supposed. There is no doubt in our mind, but that a large saving is made in using winter feed by the mode we have described; more than enough to pay for the cutting, if a man were hired by the day to do it. Any kind of meal may be used in mixing—corn, rye, barley, oats, rice, or that of oil cake.

FRUIT STEALING.

Very many people are deterred from planting trees and vines in consequence of the insecurity of the fruit, resulting from the depredation of poachers. Even here in New England, and in other sections of the country which enjoy our boasted system of universal education, our home influences, and our religious and moral principles, there is a sad laxity of obligation in respect to "coveting" this species of our neighbor's goods. The following statement by a New York correspondent of the *Country Gentleman*, illustrates a "barbarism" which is altogether too prevalent, and which has too long disgraced our civilization.

A few days ago we visited a vineyard in the eastern part of this State, where a man was kept constantly, night and day, to protect it from thieves. And we know a village in this State where, some years ago, an enterprising citizen set out a vineyard of about seven acres, and never received back enough to pay for the vines, owing to this atrocious system of thieving. Nay more: while he lay on his deathbed, a vineyard of about five acres was nearly despoiled; and on the very day of the funeral, in broad daylight, and in full view of the funeral cortege, parties entered a small vineyard near his homestead, for the purpose of stealing, and not merely for the purpose of taking a single bunch to eat, but provided with baskets to carry off their plunder!

Hay Cutters.—Now that fodder of every kind is high, every means of making it go as far as possible ought to be employed. Among them is the use of the hay cutter. Those who try it, and mix the same amount of grain in the form of meal, that they gave with the long hay, will become satisfied of the economy of its use. But do not purchase a *small one*. It may cost less money than a large one, but it will not be half so economical. A single jerk upon it—when crowded with hay, straw, or corn fodder—by a strong man, would probably render it useless, whereas a larger one would withstand it. But such violence should never be used upon any machine.

The saving of time between a small hay cutter and a medium or large one, in the work which they would do, would soon pay the difference in their cost. If there is only a small number of animals to be fed, the large or medium machine will be the cheapest in the end.

Reason for Draining Land in England. In the account of his visit to Cheshire county, England, Mr. Willard remarks that there are a great many marl pits, or places where the earth has been dug out and used for composts, years ago, and these places here are accumulations of water which soaks down from the surrounding soil, and furnishes a supply for stock in the different fields. Many of these pits are seven or eight feet deep, and cover a considerable space, making a respectable pond. "I was told that in the driest weather water was always to be found in these pits, the nature of the soil being such as to hold not only the water soaking in from springs, but that resulting from rains. In this respect the country presents quite a marked contrast to the dairy lands in America, since to see upon a level tract of land, ponds of water in the different fields, with no visible outlet or inlet, was, to me at least, an unusual sight."

PRODUCTS OF MILCH COWS.

The following is condensed from the *Hampshire Gazette's* report of the Hampshire, Franklin and Hampden Cattle Show, held at Northampton, Mass., Oct. 4 and 5, 1866:—

The first premium was given to J. L. Bosworth of Southampton, for a cow five years old. This cow was dried off the first of March last, and calved April 2d. During the week commencing April 16th, she gave 251 lbs. of milk, or 36 lbs. per day, which yielded 14 lbs. of butter. During the week commencing July 2d, her yield of milk was 30 lbs. per day, and the butter 12 lbs. Her feed was rowen hay and grass. Of course, such a cow *ought* to take the first premium, but the committee were sorely pressed in deciding between her and a cow owned by Charles S. Marsh of Easthampton. Mr. Marsh exhibited two cows. From May 17th to Oct. 1st, (136 days,) their milk produced 280½ lbs. butter. This is at the rate of a little more than two lbs. per day, or a fraction more than one lb. per day for each cow. Taking the length of time and the season into consideration, this is doing remarkably well, though much less than what Mr. Bosworth's cow did. Yet Mr. B.'s cow might not have done better for the same length of time. The temperature of the atmosphere has very much to do with the rising of cream, and we have known a variation of three pounds of butter in the product of one cow in consecutive weeks in the month of June. There are few cows that yield so much butter as those of Messrs. Bosworth and Marsh. But Dea. Erastus Cowles, of Hatfield, who was on the grounds, informed us that he has a cow that has produced *twenty pounds* of butter in one week. The mother of this cow yielded *twenty-two* pounds in one week, and at that time he had two cows, from whose milk he made 42 lbs. of butter in seven days. The Deacon is a truthful man, and we believe him. Such cows should be exhibited every year, and we hope that next year Deacon Cowles will have his famous cow at the show. His cows, like the best milkers exhibited at this and several previous fairs here, are grades, mostly high grade Durhams. Mr. Marsh's cows are grade Durham and grade Herefords, the former averaging 14 quarts per day during the above trial, and at times giving 18 to 20 quarts, and the latter averaging 11 quarts. Had he made a fuller statement, showing what quantity of butter the grade Durham cow produced alone, the committee would have awarded him the first premium; as it was he took the 2d and 4th.

M. S. Kellogg, of Chicopee Falls, a dairyman of large experience, exhibited seven cows, four of which produced as follows:—1. "Jenny," calved Oct. 25, 1865, gave from Nov. 19 to Dec. 19, (31 days,) 1177 lbs. of milk, or 38 lbs. per day, and Nov. 19, 20 and 21, her milk yielded 4½ lbs. of butter, or nearly 10 lbs. per week. Her feed was clover hay and corn fodder, with one peck of turnips and three quarts of meal per day. The meal was three parts of broom-seed and one of ears of corn, ground together. In June, she gave 415 quarts of milk, or nearly 14 quarts per day, on pasture feed only. She calved again Sept. 24th. 2. "Myrtle," calved Nov, 23, 1865, gave from Nov. 26 to Dec. 26, (30 days) 1253 lbs. of milk, or nearly 42 lbs. per day. Dec. 10, 11, and 12 she produced 4 lbs. and 5 oz. of butter. In June she gave 291 qts. of milk, or nearly 10 quarts a day. Feed same as "Jenny's." 3. "Duchess," calved Dec. 16, 1865, gave from Dec. 25 to Jan. 25, (31 days,) 1335 lbs. of milk, or about 43 lbs. per day. Jan. 5, 6, and 7, her milk produced 5 lbs. 5 ozs. of butter. Feed same as above. In June she gave 343½ quarts of milk, or about 11½ qts. per day, on pasture feed only. 4. "Tulip," calved May 3, 1866, gave in June 1146 lbs. of milk on pasture feed. Mr. Kellogg's cows are Ayrshire, and he thinks this the best breed for milkers.

The little Jerseys came in for a goodly share of attention. A little beauty owned by George S. Clark, of Easthampton, two years old, secured much notice. She gave 9 to 10 quarts of milk per day on pasture feed—not a large mess, but the quality makes that balance—3 pints of cream produced 2¼ lbs. of butter.

Among the milkers, though not entered as such, was a little rusty-looking black Kerry cow, with tail and horns disproportioned to the rest of her make—one of a herd of four, owned by Dr. F. D. Huntington, of Hadley. This cow, bad as she looks, gave 16 qts. of milk per day, for three months. The milk is said to be remarkably rich.

Spencer Parsons, of Northampton, showed a very large native cow, 8 years old, weight 1500 lbs. She has given, with best pasture feed, 40 lbs. of milk per day, and produced 14 lbs. of butter in a week.

FALL MANAGEMENT OF SHEEP.

It requires a much smaller expenditure of feed to keep animals in good condition than to restore them after they are allowed to fall away. Bring your sheep to the barn in good order, and with comfortable quarters and good hay they may easily be made to thrive through the winter. If permitted to lose flesh in the fall, they lose also something of vigor and energy, and come up with appetites less keen and healthful. It is difficult to make them fill themselves. A liberal feeding of grain is necessary to bring them to a good condition.

Breeding ewes, especially, should be attended to. Keep them thriving every day and they will bring large, well-developed lambs and yield plenty of milk. Let them grow poor now, and the loss cannot be regained; next fall you will have a thin ewe and a mean lamb.

Sheep should not be exposed to the fall rains. They are very sensitive to cold and wet. The

evident discomfort with which they submit to soaking rains, even in the warm days of summer time, shows that it is, to some extent, injurious. The falling rain is usually cooler than the atmosphere. The evaporation of water retained by the fleece liberates heat from the body. A chill, a cold, and often a fever is the result. If all of these evils are escaped, the extra consumption of food to sustain the animal heat is a positive and a considerable loss.

Do not leave them to seek shelter in the woods. Bring them to the barn in every cold storm. Give them a little hay. The cost of a few bushels of grain and a few hours' time at this season will be repaid four-fold in the improved condition of the sheep.—*N. H. Farmer.*

AN AGRICULTURAL YEAST.

Some French writer as long ago as 1674 stated his belief that the soil contained the elements of fertility in abundance, and that eventually some simple substance would be found to act upon the land as yeast acts on dough. Mr. P. G. Kenny, "Near Rahway, N. J.," informs the *Working Farmer* that he thinks he has discovered this simple substance which is not only to supersede manure, but to effect such a "progression of the soil," as will cause "weeds to disappear from our fields, and insects, mildew, &c., from our trees, vines, grains and other crops." After reading the following statement of his success in the use of this "great fermenter," our readers will feel disappointed by the announcement that ten years must be devoted to further experiments, before the secret can be divulged. Can't some of our Agricultural Colleges assist Mr. Kenny in the perfection of his "yeast," so that we may set some of our fields "a rising" as soon as may be?

In the spring of 1865, I tested a substance on three trees in an orchard of 40 or 50 (peach); the leaves soon began to look darker than the others, fruit more healthy and large. Before trying it on these trees the fruit was dropping off—this arrested the dropping of the fruit on the three trees. They matured magnificent fruit; there were not 50 good peaches obtained from the balance of the trees. Early this spring I applied the remedy to two rows; result, color of the leaves much darker—later, applied it to all the trees—the leaves soon began to assume a darker hue. One tree was covered with leaves, many on the limbs ¼ to ¾ inches long, of a pale light yellow color, (presume this is yellows). About a month ago, tried experiments on this tree; in two weeks the leaves became darker; are now threefold in size and look healthy.

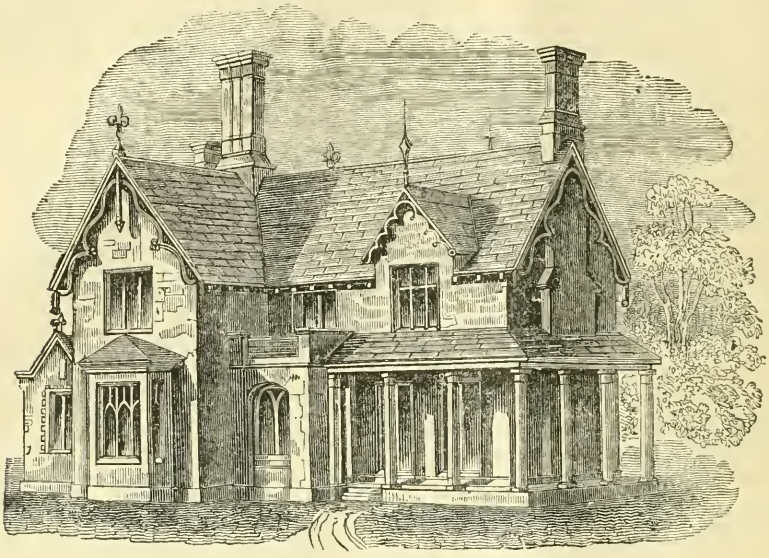
There has not been a worm or cob-web on the orchard this year, (this may be chance). My neighbor's orchard (apple) owing to the worm, will not mature one-sixth of a crop, and that will be knotty. The application hastens the growth of young trees, renders the bark smooth, and arrests the issue of gum.

TREATMENT OF CROUP.

Croup is an inflammation of the inner surface of the windpipe. Inflammation implies heat, and that heat must be subdued or the patient will inevitably die. If prompt efforts are made to cool the parts in case of an attack of croup, relief will be as prompt as it is surprising and delightful. All know that cold water applied to a hot skin cools it, but all do not as well know and understand, that hot water applied to an inflamed skin will as certainly cool it off. Hence the application of cold water with linen cloths, or of almost boiling water with woolen flannel, is very efficient in the cure of croup. Take two or three pieces of woolen flannel or two folds, large enough to cover the whole throat and upper part of the chest; put these in a pan of water as hot as the hand can bear, and keep it thus hot, by adding water from a boiling tea-kettle at hand; let two of the flannels be in the hot water all the time, and one on the throat all the time, with a dry flannel covering the wet one, so as to keep the steam in to some extent; the flannels should not be so wet, when put on, as to dribble the water, for it is important to keep the clothing as dry as possible, and the body and feet of the child comfortable and warm. As soon as one flannel gets a little cool, put on another hot one, with as little interval of exposure as possible, and keep up this process until the doctor comes, or until the phlegm is loose, the child easier, and begins to fall asleep; then gently wrap a dry flannel over the wet one which is on, so as to cover it up thoroughly, and the child is saved. When it wakes up, both flannels will be dry.—*Hall's Journal of Health.*

A Merited Compliment.—Gov. Bullock, in a speech delivered by him at the Norfolk County Agricultural Fair, thus speaks of the labors of President Wilder, who has given for a long life, his wealth, influence and energies, to the dissemination of horticultural knowledge and horticultural acquisitions:—

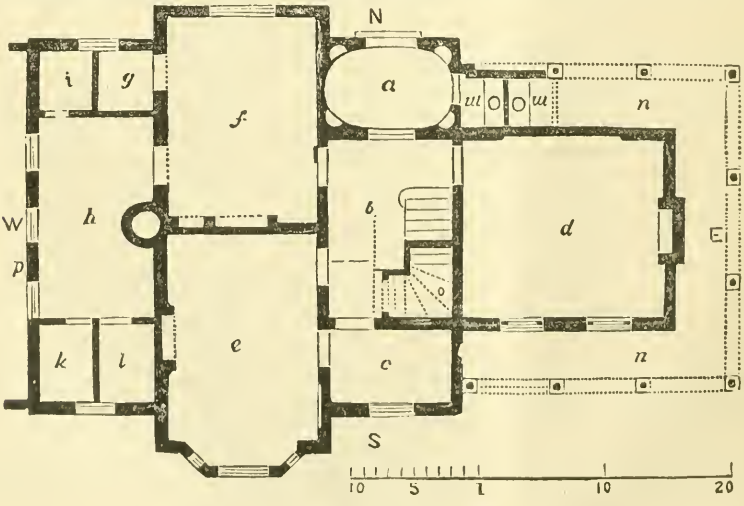
I meet here to-day the members of this youthful and prosperous society of Norfolk, sitting and rejoicing under the presidency of one, (the Hon. Marshall P. Wilder,) who has applied the results of well-earned commercial fortune to the development of the capacities of the earth, so largely and so liberally that in every household and at every fireside in America, where the golden fruit of summer and autumn gladdens the side-board or the hearth-stone, his name, his generosity, and his labors are known and honored.



PROSPECTIVE VIEW OF AN ENGLISH COTTAGE.

We present this month the elevation, and the arrangement of the rooms on the ground and chamber floors of a "Gothic cottage," transferred and engraved for the NEW ENGLAND FARMER, from Loudon's Encyclopedia of Architecture. We have not done so, expensive as it is to reproduce cuts, with the expectation that every body will be pleased with every feature of this house. We do not pretend it is faultless; we anticipate criticisms and objections. Still we believe it possesses peculiarities and advantages which may be adopted by those who are endeavoring to combine in one plan as many conveniences as possible. At any rate, we hope that many of our readers will find something in it to meet their wants.

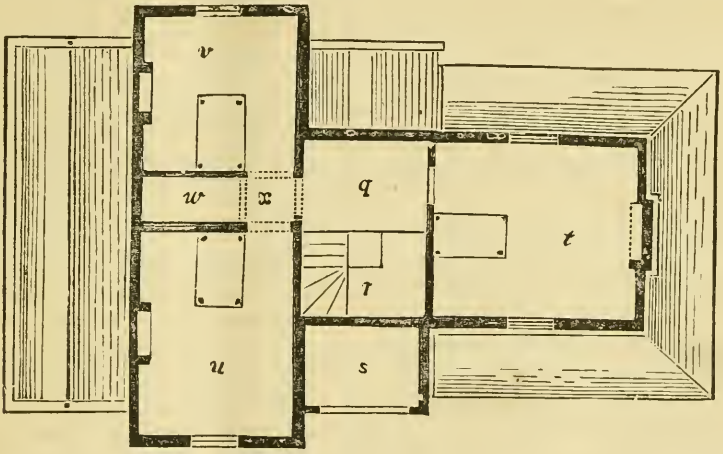
In the ground-plan, with the points of compass indicated by the letters N. S. E. W., (*a*) is the entrance porch, which is to be finished with a covered roof, and to have Gothic niches at the angles, for statues, or vases for flowers. From this you pass to the hall and staircase (*b*,) by a Venetian door, the upper part of which may be glazed with stained glass; thence to a small



Ground Plan.

ante-room (*c*,) which may be used as a book-closet, or, having a good southern exposure, as a conservatory for plants. From this there may be a glazed door leading to a piazza, surrounding the eastern wing of the cottage. From the hall you enter the dining room (*d*,) the two windows of which may be brought down to the floor and open like French casements, so as to lead out to the piazza. From the hall you likewise enter the drawing room, (*e*,) which may have a glazed door opening into the conservatory. If preferred, *e* may be made the dining-room, and then a communication may be made with the kitchen, (*f*.) From the kitchen there is a door leading to a closet, or pantry (*g*,) and another to the back kitchen or wash-house, with a copper, (*h*;) a larder for meats, (*i*;) a place for cleaning knives, boots, lamps, etc., (*k*;) and a store room, (*l*.) There are two water-closets, (*m. m.*) both under cover; one entering from the porch, the other from the piazza. Under the principal staircase is a flight of steps, (*o*,) shut in by a door descending to the cellar. Behind the wash-house, (at *p*,) is a kitchen yard, which may be surrounded by a high fence, and covered with shrubbery; where may be the wood-house, privy, well, etc.

In the chamber floor plan, *q* and *r* show the landing and stairs; *s*, a balcony over the conservatory, entered from the staircase window; *t*, *u*, and *v*, bedrooms, with the places for the beds; *w*, linen-closet; *x*, passage-way.



Chamber Floor Plan.

For the New England Farmer.

UNDER LOCK AND KEY.

Self-preservation is an instinct with us all, yet there is a wide diversity of practice as to the modes of securing our goods and chattels. There are certain secluded rural districts where the good folks never think of locking their houses, or stables, and live in blissful ignorance of bolts and bars. And surely it is no trifling compensation for living so out of the way of the "march of civilization," that they are spared the thieves and burglars who follow in its wake. But even into such safe nooks and corners of creation, the fashion of locking up is gradually intruding, and there is hardly a community now in our own New England where the master of the house thinks of going to bed without looking to the fastening of his doors and windows. A worthy neighbor told me, however, that he never locked his barn or granary, because it was too much bother, and he had never suffered by the neglect. But no man is more careful or particular about making his house secure, and none more kind and merciful to his live stock. It is to be hoped that no mean horse-thief will ever constrain him to fasten the door upon an empty stall, but I could not help thinking in this connection of the old adage about locking the stable door after the steed was stolen.

There is a feeling of security when we have properly secured our houses and barns, that amply compensates for the trouble and expense. And if, in spite of these precautions, we suffer

from thieves and burglars, we have them only, and not ourselves to curse.

Some simple-minded people will, to this day, insist that all these devices for the protection of our persons and property argue distrust both of God and man. So they object to lightning-rods, as well as front-door locks, and feel sure that Providence will care for them better than for those who act on the principle that Providence cares for those who care for themselves—until some day the house is struck or robbed, and that shock shakes pretty effectually the scales from their eyes.

Locks may be picked, and trunks broken open, and cunning rascals seem to crawl through key-holes; the lightning may now and then set all conductors at defiance, and the devouring element baffle all efforts of man and machine to subdue it, but this only reminds us that having done what we could, above all God is our refuge and defence.

Neither does this resort to lock and key necessarily impute dishonesty to our domestic and farm help. Of course much depends on their characters as developed day by day. Some prove themselves such good and faithful servants that we could almost surrender to them the keys, and give them the freedom of the house; while others have a mania for pilfering and thieving, and not conscience enough to keep from lying when caught in the act. To such it is a mercy that bolts and bars have been invented, and that such an institution as the "lock-up" was devised. And even the former class may be kept safe and uncontaminated from temptation by this very device of lock and key.

But let us not press this too far. To my mind there always seemed something ungracious in the policy of distrusting every man till he has proved himself trustworthy. To be sure, in this present evil world, confidence must be a plant of slow growth, and no stranger can claim at once our trust. But how many poor, simple souls have been the victims of needless suspicions. How many originally honest hearts have been driven into dishonesty by a withdrawal of confidence. And into how many souls is iron driven by the bolted lid or door that bears false witness to their real intentions.

I remember an estimable Kentucky lady who conceded that the peculiar institution under which she had been born and educated was a great inconvenience because it obliged her to keep everything under lock and key, consequently her slaves grew up with the idea that they were all a thievish set, and were not slow to do credit to their training.

But even our Yankee housewives may be in danger of the same extreme by dividing their time between the "lock stitch" and their bunch of keys. However it is better to err on the safe side than to leave everything lying around loose. W. E. B.

Longmeadow, Mass., 1866.

For the New England Farmer.

ORCHARD OF ISAAC EMERSON.

We were much pleased with a visit to the orchard of Isaac Emerson, in Windham, Rockingham Co., N. H. This gentleman has made a business of cultivating fruit, apples and peaches in particular; and now devotes his whole attention to this branch of farming. His trees are very thrifty, and a large part of them show a most remarkable growth; not second, in this respect, to the very beautiful orchard of Mr. John French, of Northampton, which took the first State and County premiums. The soil on which a large part of Mr. Emerson's trees grow is not well adapted to the cultivation of ordinary farm crops, as there is only a depth of from one to three feet before striking a solid ledge.

One orchard of four acres is twenty years old from the bud and has been set nineteen years. In the winter of 1853–4 about one-third of the trees were killed by freezing of the trunks. This induced Mr. Emerson to contrive some method to protect them for the future; and he thinks he has a complete remedy. He places rocks on the Northwest side some eight inches from the trunks and piled about 2½ feet in height. This causes the snow to drift about the trunk and thus forms a protection. Where it is not convenient to place rocks in this way, he piles muck about the same distance from the trees. He thinks that muck should never be heaped up against the trees, as it injures the bark. In the spring, these piles of muck are leveled around under the branches.

On three acres of this orchard, crops have been raised every year until the two last. In cultivating, care should be taken to plough the soil towards the trees rather than from them. They were set 27 feet apart each way, and a peach tree between; but Mr. Emerson thinks that forty feet is a better distance even if no peach trees were set between the apple trees. Mr. French, of Northampton, N. H. is also of the same opinion, as he finds his orchard has attained such a luxuriant growth that he has had to remove a part of his trees. One acre of this orchard has been kept in grass constantly, but the trees have been carefully hoed around under the branches. This acre has made a growth which would be called good on most farms, as trees are generally cultivated; but there is a very marked difference between them and those on the part that has been cultivated; the trees being much smaller and have not borne as well in proportion to their size. One great peculiarity of Mr. Emerson's trees, is, that they have not been trimmed up, but have been allowed to branch out so low that the limbs reach very near the ground. He thinks, however, as the result of his experience, that he should not have them quite so low, were he to train an orchard again. The peach trees, from eighteen to nineteen years old, are

very thrifty, with large tops. They are mostly of the Early Crawford, Coolidge Favorite, and Seedling varieties.

Last year Mr. Emerson had on this orchard from sixty to seventy barrels of apples. This year the trees blossomed well and set for fruit, but a frost killed many of the apples when about the size of peas; and many of those that grew were one-sided, caused by the cold weather. Mr. Emerson has, however, a very good share of apples this year. He has other good orchards, but I have given a particular description of this as it illustrates his management, which has been very successful.

Much of the land in Windham is naturally well adapted for farming purposes and there are some good farmers and fruit-growers; but many of the farmers devote their time to teaming, to the neglect of their lands. In this, they mistake, in my opinion, their true interests; for the same labor devoted to their farms would in a few years pay them much larger profits. If they would try feeding grain to stock, either to make milk or for other purposes, for a few years, they would find it so.

Corbett's pond, in Windham, and its surroundings afford a most delightful prospect, and it would well repay all lovers of the beautiful in Nature to take a drive around the pond in any pleasant season of the year, especially in October. C. E. WOOD.

Nov. 1st, 1866.

For the New England Farmer.

METEOROLOGICAL RECORD.

These observations are taken for and under the direction of the Smithsonian Institution.

August.

The average temperature of August was 64°; average midday temperature 72°. The corresponding averages for August, 1865, were 68° and 78°. Warmest day the second, averaging 76°; coldest day the twenty-fourth, averaging 56°; coldest morning the twenty-fourth, thermometer 50°. Range of temperature from 50° to 84°.

Average height of mercury in the barometer 29.16 ins.; average do. for August, 1865, 29.25 ins.; highest daily average 29.42 ins. lowest do. 28.98 ins. Range of mercury from 28.94 to 29.45 ins.

Fifteen rainy days; amount of rain 5.97 ins. Six rainy days in August, 1865, and 1.47 ins. of rain. There was one cloudless day; on one day the sky was entirely overcast. No cloudless days nor days of total cloudiness in August, 1865. The difference between the temperature and also the amount of rain in August this year and that of same month last year will be noticed.

September.

The average temperature of September was 59°; average midday temperature 67°. The corresponding averages for September, 1865, were 65° and 75°. Warmest day the second, averaging 74°; coldest day the twenty-third, averaging 46°; coldest mornings the 16th, 23d and 24th; thermometer 34°. Range of temperature from 34° to 80°.

Average height of mercury in the barometer 29.26 ins.; average do. for September, 1865, 29.34 ins. Highest daily average 29.56 ins.; lowest do. 28.92 ins. Range of mercury from 28.88 ins. to 29.62 ins.

Fifteen rainy days; amount of rain 7.18 ins. Eight rainy days and 3.38 ins. of rain in September, 1865. There was one cloudless day; on five days the sky was entirely overcast. Five cloudless days and two days of total cloudiness in September, 1865.

These two months, August and September, will be long remembered as cold and wet all over the country, and especially when compared with last year. The earth, having become dried to a great depth by two years of drought, is now filling up again with water, of which we surely cannot complain, though some loss and suffering be caused thereby. A. C.

Claremont, N. H., 1866.

For the New England Farmer.

THE LANGUAGE OF FLOWERS AND PLANTS.

We do not, in this article, refer to the definitions given in some glossaries; for such definitions are arbitrary, capricious and unnatural. But we refer to the real unequivocal language of nature, in this her most beautiful aspect.

When Mungo Park, one of the early explorers of Africa, sank down with hunger, fatigue and sickness on the banks of the Niger—that geographical mystery of his age, in an inhospitable climate and among inhospitable inhabitants, and in despair of succor, resigned himself to death, a beautiful though small and modest plant caught his languid and almost dying eye, and said to him, "He who has done so much to sustain and adorn so humble an object as myself, will not forsake thee." Mark how this corresponds with the language of Scripture: "If God so clothe the grass," &c. Encouraged and invigorated by this appeal, he arose and reached a native settlement, where, among pitiless men, the pity of woman came to his relief.

What was the language of that modest flower, a few years ago transplanted at Botany Bay from England? I think it was the common primrose of England, *primula vulgaris*. Would it have been of any avail to have told the people of that settlement, that according to our glossary the language of that flower was—*Confidence?* No. To the hardened criminals of that penal colony, this flower, this memento of the innocence of their childhood, spake a language which needed no interpreter. Before it they knelt in homage, and in sobs and tears gave vent to an irrepressible emotion.

What says the common morning glory of

summer, *Ipomœa purpurea*, to those who awake betimes to be greeted by its early freshness? Does it not say,—there *is* a land of beauty and of joy forever, there *is* a heaven? When labors and cares oppress us, when friends forsake and disappoint us, when misfortunes wound and grieve us, let us ask counsel of the smiling, loving flowers. Will they not say, "Peace be still. In your patience possess ye your souls. God is good, God is love; all will yet be well."

Each order and genus of plants has its peculiar language. A few only say, "Begone;" nearly all say, "Come, and we will bless you."

We will briefly notice what seems to be the language of one of the orders; the *Labiata*, mint family. The little modest flowers, all with open mouths are saying: "We are a large, square-stemmed family of 125 genera and 2350 species. Do not fear us, for we are all honest and true; we are warm and cordial in our friendship, and our mission is to do good. Do not rudely trample us under foot, lest we be compelled to waste our perfume in unavailing endeavors to attract you. For your good we will surrender our pleasant lives, and you may pluck us in the bloom of youth and lay us by forgotten; only remember us when you are in sickness and in pain, that we may come and bless you."

The immortality of flowers. Not the visible, tangible flowers—nothing is more perishable than they. The things that are seen are temporal, but the things which are unseen are eternal. The artist may have such an accurate conception of a beautiful object as to be able to paint it, or construct it of wax or other material. Now there can be no doubt in this case which is the perishable and which the durable, which the shadow and which the substance. The materials of the tangible flower are not its essence in any sense. They are mere materials and may form various objects. Nor is their combination, merely, the essential flower; but their combination in conformity to a plan. Hence the *plan*—the idea—is, after all, the essential, indestructible, immortal flower. Every essential beauty of the creation, before it is shadowed forth in materiality, must have existed in the Divine mind, and must continue to exist where there is no forgetfulness or obliteration. There may be kinds of knowledge which will vanish away, but the knowledge of such things as are essentially invisible and eternal is itself eternal.

It is a most encouraging and consoling sentiment, that in tracing out the plans of the great Creator, and thus thinking the thoughts of God, we are making mental acquisitions which like the moral and religious will endure forever. I. B. HARTWELL,

Wilkinsonville, Mass., 1866.

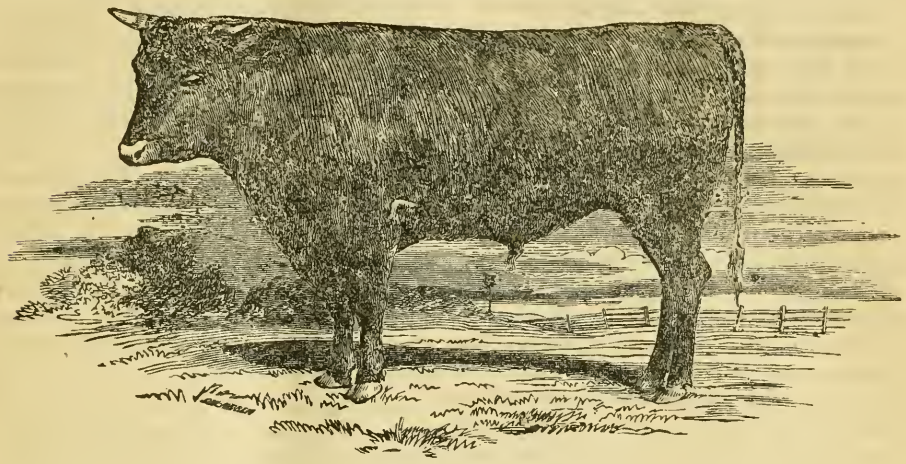
THE farmers of Rupert, Vt., and vicinity have formed an association for making cheese.

CAPITAL AND LABOR.

The great objection to my farming is, that I "spend too much money for hired help." But I cannot get along with less. And I find the best farmers expend the most money for labor. "I have always kept a great many men," said John Johnson, "but I was always with them and kept them at work." This is the point. If the labor is well directed, and is judiciously employed—if the farmer plans his work so that there will be no loss of time, he can better afford to hire extra help, than to let teams lie idle.

We cannot farm now as when the country was new. If we attempt it as many do, poor crops and run down farms will be the result. We must expend more labor and more capital. We must cultivate our land better, feed higher, make richer manure, and see that it does not run to waste. I am fatting over fifty hogs. "It would pay you," said a good old-fashioned farmer in the neighborhood, "to let a man devote his whole time to feeding them." No doubt about that; but you say I keep too many men already. My horse barn is separate from the other buildings. The litter is thrown out into a loose heap, and if suffered to remain so, soon heats, and becomes fire-fanged. I draw it with a one-horse cart into the barn-yard, and the pigs work it over and make it into the richest kind of manure. But this takes labor. I clean out the pig-pens every day, and give fresh litter. But this, too, takes labor. One of my neighbors says, I wash my pigs with warm water and castile soap. This was one of his jokes; but I *do* try to have the pigs and pens washed occasionally, by throwing water on them with an aquarius. The pigs evidently enjoy it, and thrive better; but this, too, takes labor. I am drawing the potato tops into the barn-yard for the stock to tread into manure. It will pay twice over, but it takes time. The diseased potatoes I steam up for the hogs, and mix corn and barley meal with them while hot, mashing up the potatoes. It makes splendid food, and is the best way to use potatoes partially decayed. But the sorting out the decayed ones, washing them and steaming and mashing with meal, involves considerable work. It would be much easier to have a pen of rails on the ground, to throw all ears of corn into the mud, and let the pigs do their own shelling, grinding, and cooking.

To farm properly, we need capital and labor. The latter we are now getting at fair rates, as compared with the price of living. We have land enough and work enough. But we need more capital and a lower rate of interest. And surely these men are to be honored who, having large capital, (I could wish I was one of them,) go on to a farm and employ it in developing the resources of the soil. There are hundreds of such men, and the number is rapidly increasing. Their influence and example must tend to the improvement of our general system of agriculture.—*Joseph Harris, in Am. Agriculturist.*



THE DEVON RACE OF CATTLE.

Many of the handsomest and best oxen now in use among the farmers in New England are of the Devon blood. They are straight on the back, the head small and eyes bright, very quick in their movements, and when slaughtered, excellent for the shambles. Many suppose that the origin of the natives was largely Devon.

The north part of Devonshire, in England, has long been celebrated for this breed of cattle—beautiful in form and color, in the highest degree; and in activity at work, and facility of fattening, unrivaled. The color of the Devon cattle is of a beautifully bright, full, blood-red, often with a clear white line on the brisket, running back between the hind legs, sometimes reaching to the flank, with a white brush. The head of the ox is singularly small, the forehead broad, the eye prominent and bright, and the forehead hollow between them; the muzzle very light and clean; no dewlap or loose flesh about the jaws and neck; remarkably straight, smooth, well-turned limbs; a light, tapering tail; a thin, free skin, and very smooth body. His fore-legs stand farther back under the body than those of other breeds. The Devon has rather long legs, is more active and sprightly than any other, and may be made to trot three or four miles an hour, which no other ox can stand. The cow is quite small; the bull is a great deal less than the ox, and the cow smaller than the bull. It is not uncommon for a cow to bring a calf which becomes twice her own size and weight.

WOOL GROWERS' ASSOCIATIONS.

We have received from the Secretary of the National Wool Growers' Association the following circular which we publish with pleasure. The importance of the measures now in progress, in which all wool growers have so deep an interest, makes it very desirable that the National Association should be able to communicate readily with all local auxiliary associations, whether State, county, or town.

To the Officers of all Wool Growers' Associations in the United States:

GENTLEMEN:—Will you please forward to my office, at the earliest moment possible, the names and Post Office address of the Officers of your societies, with the number of members you have enrolled.

We desire to procure the address of officers, and number of members of district, county and township associations as well as those of State organizations; as the address of *every* Wool Growers' Association in the United States is desired.

It is earnestly hoped that *all* will respond *promptly*. By order of the Executive Committee.

W. F. GREER, *Secretary*
National Wool Growers' Association.

Painesville, Ohio, Nov. 20, 1866.

THE Editor of the Hartford *Post* speaks favorably of the following varieties of the newer pears: Andrews, Sheldon, Doyenne Boussock, Pater Noster, Beurre Langelier, B. Hardy, Emile d'Hyest, Merriam, Clapp's Favorite and Dana's Hovey. The following are mentioned as among the best of the old standard sorts: Bartlett, Flemish Beauty, Louise Bonne de Jersey, Seckel, Buffum, Beurre d'Anjou, Vicar of Winkfield, Diel, and Duchesse d'Angouleme.

SHALL I SELL MY LITTLE FARM?

Farmers and mechanics, as well as professional men, with comfortable homes in the country, are constantly tempted by the idea of making more money, to abandon old friends, old associations, and old habits of life, and seek to better their condition by removal to the cities and large towns.

Passing by for the present, the sacrifice of home feelings and enjoyments which every man of mature age surrenders whenever he changes his accustomed home, we will now look only at the financial side of the question, and see what a man, on any New England farm, great or small, gives up when he leaves it and goes to dwell in the town or city. We are always complaining that we get nothing from our farms, and we fancy if we could only get somewhere where money is more abundant, where wages are higher, where there is more going on, we should have some chance to be rich, and live more independently.

Perhaps there has never been a time when, in this country, a farm, or even a field or garden contributed so much to the independence of a family of moderate means as in these times of high prices. The reason is obvious. It is because all that we buy, whether rent, or fuel, or provisions, costs more than ever before, and all that we do, by way of labor, produces a greater value in the crops we raise.

You say you get little or nothing from your farm. Let us consider the matter and see whether we do not underrate the profits of the homestead. In the first place, you get your rent, an item of which farmers hardly think. Go to any large town, and such a house as will be as respectable for your family there as your present one is here, will cost you in rent some four hundred dollars. It may be newer and nicer than the old homestead, but it will be no more comfortable or convenient.

We say nothing of its being in some narrow, noisy street, where you don't know your nearest neighbor, and where you must hire watchers in case of sickness. That belongs to the sentimental side of the question, which to-day we leave out of sight.

Next, your farm gives you your fuel,—you don't know how much, for you never had occasion to measure it. A farmer's family of half a dozen persons consumes yearly from ten to fifteen cords of wood at least. Less fuel would suffice in the city, with a liberal outlay for furnaces, patent stoves and heaters; but with coal at ten dollars a ton—a ton being equivalent to about one cord of the best hard wood—when kindlings are paid for, another hundred dollars would be about used up.

A cow or two afford the farmer all the butter and milk he can use for his family. A pound of butter a week for each member of the family is a fair estimate, and at fifty cents a pound we have for our family of six, three dollars a week, or $150 a year, and if we add only two wine quarts of milk daily, at the city price of ten cents, we have $73 more.

A small patch supplies you with potatoes, of which you require some thirty bushels, which will cost you at retail prices as many dollars, although if you want to sell them at your farm they will bring much less, there being two or three profits between the producer and the city consumer.

A very few trees supply your apples, worth four or five dollars a barrel if you buy them. And any ordinary garden gives the family vegetables fresh in summer, which the city will not do at any price.

The small matters of currants, and raspberries, and strawberries, the pears, the grapes, —all become large matters when paid for in money. The fowls that give abundance of eggs, and a supply of poultry for Thanksgiving and Christmas, seem of little account till reduced to a specie basis; and two or three porkers grow up with little cost, and in autumn are worth a hundred dollars almost before we know it, and thus our bills for pork and lard and fresh meat are easily balanced with the butcher.

In the country, everybody has a horse. We care little about driving, perhaps; but the boys and girls, at least the boys, ought to learn to ride and drive, and they do that and learn how to tend the horse and cow without going to an agricultural college. In the city or town, only men of wealth can afford to keep horses, and hiring them at stable prices is almost as expensive.

So, brother farmer, when you have got into your hired house, with never a wood-lot, nor a garden, nor a potato patch, nor a cow, nor a hen, you may also set it down that you can have no horse; and if you, however prosperous in money matters, do not sigh for the flesh-pots

of the old homestead, come up to the NEW ENGLAND FARMER office and tell us the other side of the story.

CULTURE OF FOREST TREES.

The late war gave occasion for great inroads upon nearly all the timber lands of New England, and especially upon its forests of white oak. Whether near a railroad, or not, scarcely a farm has left standing upon it the giant oaks that have given it grandeur and value through two or three of the generations just passed. Their oaks now float upon the waters of all the seas of the world, and are wrought into the powerful engines of destruction that protect our coasts and command the respect of all foreign naval powers.

The great extent of manufacturing throughout all New England, has also drawn upon our forests until they are nearly exhausted in all its more thickly-settled portions. There is scarcely any conceivable implement, or article of machinery, that is made of wood, but what is manufactured among us, from a lucifer match to the mast of a ship or her keelson. The annual growth has not kept pace with the enormous demand, and consequently our forests are reduced, and manufacturers are forced to seek supplies far off and at greatly increased cost.

It is time to look at this matter considerately, and do something to secure future supplies. What shall it be?

1. *We must protect and manage better the young forests we now have.*

This may be done by enclosing them with substantial fences, so as to keep cattle from browsing and breaking down the young trees.

Another point is, to commence a *thinning process* at an early period and continue it for many years. Foresters of great experience in England state that "more plantations are ruined from neglect of thinning, than from any other cause." If the trees are allowed to stand many years without any thinning, the soil becomes exhausted, and the trees over-top and destroy each other, and the stems of the survivors are drawn up so tall, and so feeble, that they will not be able to support their tops, after dead and decaying trees are removed. It will be impossible to preserve forests of that description and maintain the selected trees in a healthy condition.

Whether *pruning* our forests is advisable, is a mooted question. We have put it to many excellent farmers without gaining any well-established opinions. At a meeting of the Concord, Mass., Farmers' Club, which we recently attended, several statements were made by gentlemen owning and managing forests, all of which went to show that forests may be managed with as much advantage to them as to apple or pear orchards. One statement, by a careful and entirely reliable farmer, was that, on a piece of land which he plowed and planted with corn 19 years ago, the yellow pine trees standing on it now will give 40 cords of wood per acre on a portion of it that had been carefully pruned. On another portion not pruned, the growth is not near so heavy. The pruning was done in mid-winter.

Thinning and pruning must be commenced early to become successful, and pruning must be done with care. In cutting off a branch the blow must be *upward*. If struck down, it will break the fibres of the wood and extend it into the body of the tree. The use of the saw is better than that of the axe, though the work may not proceed so rapidly.

If proper attention is paid to the trees when young, but little artificial pruning will be required in training timber trees. Nothing should prevent the light and air from freely reaching the strong side branches of the selected trees. If these side branches become too luxuriant, and make too much shade, they may be shortened in by cutting them off just above a *live* secondary branch.

2. *We must make forest plantations, and cultivate them for their timber.*

It is a fortunate circumstance for us in New England that there is scarcely any portion of our land, except swamps and large tracts of meadows that are allowed to be flowed, that are so poor and unproductive as not to admit of improvement, provided trees suited to the quality of the soil and the nature of the climate are selected, and the proper modes of treating them are practiced. Most of our rocky hills are admirably adapted to the growth of trees. The rocks themselves afford nutriment, probably potash, and other salts. Roots know where to find these and will cluster around them, sometimes covering them with a complete network, and acting as so many little pumps, sending supplies to branches that are

waving scores of feet above them in the upper air.

Two modes may be practiced in starting a forest. 1: By sowing the seed where the trees are to remain,—and 2d. By raising the plants and transplanting them.

The young plants are quite tender, and if sowed in the open ground must have some protection in order to make them entirely successful. But the gain made in not disturbing the tap root, will be a partial compensation for this trouble.

If a nursery is desired it should be made in a forest. Select a spot inclining to moisture rather than dryness, and where the sun will find its way through the surrounding branches. Cut away the underbrush, rake off the dry leaves, and then stir the surface with the rake until it is fine and moist. Upon this sow broadcast many varieties of small seeds, such as pine, elm, maple, birch, arborvitæ, &c., and cover slightly. If the seeds are good, nearly every one will come up and grow well. Most of the plants from these seeds will be extremely small at first and will scarcely be recognized as germs of the towering elm or pine. No weeds must grow among them. In such a place few, if any, will appear. If the branches of the trees around the plants are too open, they must be protected from a too hot sun.

It is said by some that nursery trees which have the tap-root taken off, and which have been transplanted two or three times, succeed just as well as those having the entire tap-root upon them. This does not seem to us a correct theory. The oak, walnut, chestnut, &c., extend their tap-roots deep into the earth, which undoubtedly furnish large supplies of nutriment to the tree as well as greatly assist in holding it firmly in its place.

Forests not only furnish us with fuel and timber, but they improve the climate by their condensing power and the shelter they afford; and the beauty of the scenery is heightened by covering barren rocks and bleak hills with the verdure of woods.

THE MOUNTAIN ASH.

Two or three of these fine ornamental trees are near us, as we write, filled with their dark, reddish or scarlet-colored fruit. The fruit hangs in large bunches all around the outside of the tree, and when the sun glances upon them, and the branches are slightly moved by the wind, the sight is a gorgeous one. Were the fruit not molested, it would remain on the tree all winter, but the troop of robins which have been reared in the thick Norway spruces and arborvitaes near by through the summer, always linger about us until most of the berries of the mountain ash are gone, or extremely cold weather sets in.

This Ash is quite common in this State, and is one of our most beautiful ornamental trees. Its habitat is low, moist places or mountainous situations, but it thrives well on most soils. It makes a height of fifteen to twenty-five feet. The leaves are of a soft green color, and a little pale underneath. Young trees may be obtained of most nursery men, or may be raised from the seeds. The tree is hardy, requiring no unusual care, and will remain in fine condition for many years. No grounds that are ornamented with trees or shrubs should be without it. The leaves as well as flowers are ornamental. Even when both leaves and fruit are absent, the fine, spray-like branches are graceful and pleasant to look at.

PENNSYLVANIA AGRICULTURAL COLLEGE.

The statement which we recently copied from the *Country Gentleman*, to the effect that this institution had fallen so low that the instruction of its students is committed to the care of a single farm hand, is pronounced incorrect by a correspondent who claims to have been officially connected with the college for three years. He states that President Allen, who retires to private life, is succeeded by Professor Fraser, a graduate of the University of Edinburgh, and lately Brigadier General of Volunteers.

Other changes will be made in the Faculty, which, it is believed, will greatly add to the ability and efficiency of that body—changes consisting both in the appointment of new Professors for chairs already in existence, and for new Professorships; and the best men that can be had will be put in these places.

In relation to the charge that the farm of four hundred acres, though situated in Centre county, one of the best agricultural districts of the State, did not pay expenses, this writer remarks that during the present year the wheat crop, which is one of the most important on the farm, hardly yielded the seed again—and

such was the case throughout this part of the valley,—so that the expenses were in excess of the receipts; but he asserts that it has, on an average, more than paid expenses, and helped support the college with which it is connected.

In relation to the remark that the cultivation of the college farm was decidedly inferior to that of farms in the neighborhood, the writer says:—

I cannot deny that the manner in which the farm has been carried on was not creditable, and that it could not be compared favorably with other farms in the neighborhood. But this has been the result, in a great measure, of the *unreasonable system* according to which it was worked by the forced, uncompensated labor of the students. The attempt was made here that has been made many times before, to give boys as good an education as in other institutions of the kind, and at the same time to make them devote a no inconsiderable portion of their working hours to hard work, and very naturally both the education and the work were imperfect. The attempt has failed of success here, as it has failed everywhere. Hereafter the farm will be worked by skilled hired labor, and, we trust, in such a manner that we shall not be required to apologize for its appearance.

The *Country Gentleman* also furnishes the following abstract of a pamphlet giving the particulars of the plans and measures lately approved by the trustees.

1. The repeal of the rule requiring every student to work three hours daily on the farm. This rule, it is stated, has "proved uniformly injurious to the financial and educational interests of the college." Students desiring to do so, however, will be permitted to perform such labor as may be allotted to them, receiving compensation therefor, in part payment of their expenses for tuition, &c.

2. The college will comprise three courses of instruction—a course of General Science, a course of Agriculture, and a course of Literature. Instruction in Agriculture will be given under the charge of a Professor of Agriculture, "by means of books and lectures in the classroom, numerous experiments on the farm, and agricultural excursions throughout the country." Students will assist in the work connected with the experiments. "For the benefit of the farming community, an Agricultural Journal, under the editorship of the College Faculty, will be established in the course of the ensuing year. In the journal, will be published the experiments made at this college, and at other places in the United States and in Europe, with other matter of interest to agriculturists."

These and other changes, with the details involved, having been adopted by the Trustees, were submitted at the annual meeting of Delegates from the different parts of the State, on the 5th of September last. At this meeting, resolutions were passed approving the action of the Trustees, and recommending them to apply to the Legislature at its next session, "for the establishment of two additional experimental and model farms East and West, in Pennsylvania, upon lands of diversified quality," on the ground that the present college farm "is not adapted for scientific experiments sufficiently varied to benefit agriculture in parts of the State differing widely in soil and climate." It was also voted that the proposed Agricultural Journal, under the editorship of the College Faculty, is "an essential means" of usefulness among the people of the State.

We submit the foregoing abstract of this college prospectus, "without comment, other than to express our regret at what seem to us to be the impracticable features it contains. That an institution which, justly or unjustly, has been open to criticism for its management of a single farm, should undertake to carry on three at the same time and at widely distant points, strikes us as equally promising with the second and associated idea—that the College Faculty, who have hitherto had their hands perhaps somewhat over-full with the instruction of their students only, should endeavor to instruct the people of the whole State, by going into the business of agricultural editors and publishers."

VERMONT AGRICULTURAL COLLEGE.

We are indebted to Henry Clark, Esq., Secretary of the Senate, and to Mr. I. W. Sanborn, for valuable legislative and other State documents. From the latter gentleman we have just received a copy of "The First Annual Report of the University of Vermont and State Agricultural College." The corporation of the University of Vermont, an old institution at Burlington, and the corporation of the Agricultural College were united in one body corporate, last November. In August, the officers of instruction and government were organized as follows:

James B. Angell, President; Joseph Torrey, Professor of Moral and Intellectual Philosophy; McKendree Petty, Professor of Mathematics; Leonard Marsh, Professor of Vegetable and Animal Physiology; Matthew Henry Buckham, Professor of the Greek Language and Literature, and Professor *pro tem* of English Literature; Alpheus Benning Crosby, Professor of the Principles and Practice of Surgery; John Ordronaux, Professor of Physiology

and Pathology; Eli Whitney Blake, Jr., Professor *pro tem* of Chemistry and Physics; Charles Wheeler Thompson, Professor *pro tem* of Latin; and James Harvey Hills, Instructor in Drawing.

It is expected that the President of the United States will detail an army officer to give instructions in military drill and tactics.

On a circular issued by the corporation, it is said that instruction will be provided,—

1. For students who wish to pursue a course of three years in Analytical and Agricultural Chemistry, or in Civil Engineering, or in Mining and Metallurgy, and to become candidates for the degree of Bachelor of Science. By a four years' study, hereafter described, Bachelors of Science may attain to the degree of Bachelor of Philosophy.
2. For students who do not desire to take a full course of three years, or of four years, but wish to pursue certain portions of the course.
3. For young men who wish to obtain such instruction as can be furnished them by a course of lectures specially adapted to the wants of agriculturists, and to be given in February and March.

Applicants for admission to the Agricultural College must be at least fifteen years of age, and must bring satisfactory testimonials of good character, and be able to sustain an examination in all the parts of a common school education, and particularly in English Grammar, Geography, Arithmetic and Algebra, as far as Quadratic Equations.

The arrangements for the reception of students were completed only four weeks previous to the beginning of the present term. Consequently a large number of young men could hardly be expected to enter the institution on so brief a notice. Five young men, however, are now pursuing the studies of the scientific course, and the executive committee of the trustees say they "have reason to believe that a larger number of students would have applied for admission to this department, if it had been practicable to announce at an early day the course of studies to be pursued in it." They also add, "We may be permitted to say, from this brief experiment, that we are confirmed in our belief that the academic and scientific departments may be conducted not only harmoniously, but with positive advantage to each other." A subscription has been started to raise the additional sum of one thousand dollars, and the corporation seem determined to do all in their power to make the institution deserving of the support of all friends of sound learning.

OTHER conditions being equal, the cow that has warmed water for drink in severe cold weather will yield considerably the most milk, especially if a handful of meal is added to each bucketful.

THE MONTHLY FARMER.

With the New Year, the weekly NEW ENGLAND FARMER is to be enlarged by the addition of one column to each page, and by a corresponding increase of length. It is also to be printed on entirely new type throughout. How shall this additional space be occupied? We hope and expect it will be filled with thoughts and facts from the pens of the new recruits who have recently so greatly strengthened our old force of readers and writers. During the past year, notwithstanding the use of small type and a severe clipping of communications for the column of "Extracts," we have been unable to accommodate seasonably all the favors of our old friends.

In addition to these improvements in our weekly sheets, the MONTHLY NEW ENGLAND FARMER is to be revived. This pleases the editors more than all the other improvements projected by the publishers. When one takes great pains in writing an article,—one which, perhaps, embodies the result of costly and long continued experiments, observation or study,—there is a feeling of dissatisfaction in committing it to a journal which perishes in its seven days' using. The MONTHLY FARMER, printed in book form, will give permanence to all the valuable agricultural and horticultural articles which appear in the weekly. At the end of the year a title page and an alphebetical index will be prepared, and arrangements made for binding. It will then take its place with the preceding volumes of the old series, in public and private libraries, where it may be consulted "by generations yet unborn," as well as by ourselves and our cotempories. Therefore, "do good, and *communicate*. The evenings are growing long purposely.

LARGE POULTRY ESTABLISHMENTS.

The great profits which are occasionally realized on a few fowls induce many people to think of extending the business. Frequent inquiries are made for our opinion as to the expediency of engaging in the business on a large scale. From our observation and reading we have felt obliged to advise against all such enterprises. A young man from Maine recently called at our office to talk over the matter, who was very confident of a successful result. To all our objections, he replied that people generally failed because they kept the hens and

especially the cocks too long. We introduced him to one of our market men who deals largely in live poultry—frequently buying several tons per week, and consequently at times has large numbers on hand. His advice to our friend was direct: "If you have money that you want to get rid of, go ahead,—not otherwise."

At a late meeting of the New York Farmers' Club, Solon Robinson said that every attempt of that kind in this country had proved a lamentable failure. Dr. Crowell said he had seen a very large establishment near Paris, which contained two hundred thousand young chickens at the time he visited it. Another gentleman said he had lately seen it stated that this great French establishment, about which so much has been published, had proved as complete a failure as any which has been attempted in this country.

Mr. Carpenter said, Warren Leland keeps a thousand or more fowls together in Westchester county, which are fed upon orts from the Metropolitan Hotel; and that the poultry business is successful and profitable. A skillful man is employed to attend to it. Generally speaking, people keep too many cocks with their hens. I have only two for seventy hens which are sufficient.

N. C. Meeker—I have been traveling for seven years as a correspondent of *The Tribune*. During that time I have visited several poultry factories. Some of them had a fair start; the owners were encouraged. They have all failed. When confined, the hens ate their chickens; where they had no chickens to eat, they ate one another. In all cases they ate the bottoms out of the pockets of their owners.

A gentleman whose name was not announced was called upon, and somewhat reluctantly made the following statement:

I have probably spent five thousand dollars in persevering attempts to raise poultry upon a large scale. I have tried it in Westchester, Orange, and Columbia counties, N. Y., where I could procure cheap food from the city. In one case, the cost of keeping a thousand fowls was $1,100 and the net results $950. I changed my location twice, hoping for better success. Then I concluded to go to Illinois, where grain was cheap. The result was the same. I have spent my time and money, and made, as Mr. Robinson says, a "lamentable failure." I have come to the conclusion that raising poultry upon a large scale in this country is not profitable. If others think it is, they can easily try it.

At the Fair of Russell Co., C. W., beside several addresses, two young ladies read essays on "the requirements of a good farmer's wife."

CATTLE SHOWS IN KENTUCKY.

A correspondent of the Canada *Farmer* who attended the late Kentucky State Fair at Paris, remarks as follows upon certain features of the exhibition which were new to him:

All the stock is shown inside the circle of a large amphitheatre, capable of seating from ten to fifteen thousand persons, so that all have a fair chance of seeing the animals. In the centre of the circle is the judges' stand, the upper story of which is occupied by a band, which furnishes music at intervals, making it pleasant for the people, as well as causing the stock to show to better advantage. The animals in the different sections are called in by ringing a bell which is hung in the judges stand. A blue ribbon is tied on for the first prize, and a red one for the second. A marshal proclaims to the crowd the names of the successful competitors of each section. When the names of fortunate men are announced a cheer is generally got up by their friends, or those partial to the prize animal, for there is great interest taken in the decisions; a good deal of excitement prevails, and among a certain class considerable betting is indulged in on the chances of the judges' decisions. The judges are appointed some time previous to the Fair, and their names appear in the printed prize list. If any of those appointed fail to appear, others are chosen by the Board of Directors, and in case a majority of the committee fail to agree as to a decision, another is called to decide. No tickets are placed upon the animals. The judges ask no questions with regard to breeding or owner, but take the animal on his own merits, and are not supposed to know who is the owner until after the decision is given, and the marshal enquires of the groom the owner's name and announces it to the crowd.

SWISS FARMING.

New England is sometimes called the Switzerland of America. However striking may be the similarity of the scenery, there must be, we think, quite a diversity in the habits of the people, judging from the following account by "Carleton" of the Swiss style of "getting up wood," "going to mill," and "making hay." In approaching Mont Blanc, he says:—

We meet a woman with a great basket strapped upon her back filled with faggots; another one passes us on her way to mill, her "grist" in a bag lying on her shoulders and a strap from the bag crossing her forehead. In the field opposite, a third woman is mowing. She stops to sharpen her scythe, and we have an opportunity to inspect the implement. No bushwhacker in the United States—no farmer's boy in all the Union—swings so heavy a scythe—sixteen inches long, four wide, and thick enough for the track of the Metropolitan horse

railroad! A man with a three-tined wooden fork tosses up the grass to the sun which the "weaker vessel" is mowing! While watching the operation in the field, a damsel passes us with a wash-tub on her head. No grenadier of the grand army of France ever stood more erect. She is busy with her knitting-work the while.

For the New England Farmer.

A JOURNAL ON DESTRUCTIVE INSECTS.

MR. EDITOR:—Are the farmers of our New England States generally aware that there is a valuable paper published monthly in Philadelphia "for the dissemination of valuable knowledge" about insects all over the land, at a less annual cost to the subscriber than it takes us here in the city to buy a pound of good butter?

Scientific men and societies with scientific aims, have been frequently condemned for caring only for the Greek and Latin names of things, and nothing for the use to which their knowledge might be put in aid of the common necessities of every-day life. Doubtless the charge has some truth in it, but labor must be divided to accomplish much. Now here is a go-between, published by a scientific body, which invites the farmer to contribute of his knowledge about insects to the entomologist, who, in return, will do his best to aid the cultivator of the soil. It is an admirable plan, well conceived, very practical and practicable, and satisfactorily carried out; it will certainly be no less for their detriment than their discredit if our farmers don't assist in its support.

I send you the number for July last, a duplicate of which I happen to have in hand, that you may see for yourself what an admirable thing it is. It commences, you will see, with an article illustrated with wood cuts, giving some outlines of the study of insects, told in clear, simple language, so that any of our boys may acquaint themselves with the general features of their structure; then follow different articles of a column or two in length, about various insects injurious to vegetation, what they are, the injury they do, and how they may best be destroyed. One, you will notice, brings together extracts from different agricultural papers about the same insect, and clears up their apparent incongruities of statement, or exposes the mistakes into which the writers had fallen. There is, in this number also, an article on scientific names, to show why naturalists are obliged to use them. Then follow more than three pages of answers to correspondents, by the associate editor, one of the most industrious and active entomologists in the land, with a very accurate and practical knowledge of insects and their ravages. This seems to me the best feature of the journal, and is admirably sustained in each number. In this way the farmer is made acquainted with the injuries which insects are doing all over the country, and will be quite sure to find an account of some which have been giving him particular trouble, and be informed what they are, and how best to rid himself of them. In this single number are answers to communications from no less than thirteen States, extending from Maine to Kentucky, and from Maryland to Missouri.

The paper is a quarto of a dozen pages, all but two of which contain original reading matter. Surely 144 pages of such a journal as this are worth fifty cents a year. They have published it at this cheap rate in the hope that they may receive a long list of subscribers, and state that it cannot be supported on less than 5000 names. The year commences in October, and I believe every subscriber will be convinced, at the end of the year, that he has received in valuable information, ten times its cost. Now is the time to subscribe, and I hope it will receive the cordial support of every farmer and horticulturist in the land. The paper is called "*The Practical Entomologist*," and is published monthly, at No. 518 South Thirteenth Street, Philadelphia. S. H. S.

REMARKS.—About a year ago we received a circular from the "Entomological Society of Philadelphia," soliciting subscriptions towards a fund of $50,000 which it was proposed to raise "to insure the permanence of the society and the continuance of its publication." The publication alluded to was an annual volume of "Proceedings," three of which had been issued with the following pecuniary result, as stated by its publication committee, Jan. 1st, 1865:

Expenses	$1,796 33
Aggregate income	550 00
Deficiency	$1,246 33

In connection with this circular, we received the first number of a new monthly publication, entitled the "*Practical Entomologist*," to be issued GRATUITOUSLY, by an association of whose fitness for prosecuting the business of book and newspaper publishing we had no other means of judging than what was furnished by the above account current, rendered by its own special committee. In connection with these documents we were also considerately furnished with a plainly written editorial for our own columns, warmly commending both the Society at Philadelphia and its publications to the liberal contributions and patronage of the readers of the NEW ENGLAND FARMER.

We appreciate as highly as any one the labors of scientific men. We anticipate much from their cordial and hearty co-operation with what are usually termed the laboring classes.

Indeed, we include them in our list of the industrial professions, believing they should be considered working men. Still, our experience and our observation is yearly strengthening our conviction of the importance of the truth expressed by the aphorism "Every man to his trade." On this principle we have questioned the expediency of such institutions and associations as the "Department" at Washington, the Agricultural College, the Entomological Society in Philadelphia, or any similar organization, engaging in the book or periodical publishing business, especially on the *gratuitous* system. In our notice of the first number of the *Practical Entomologist*, we expressed the same opinion.

This publication has been issued one year. The free system has been abandoned, and an able and responsible editor announced for the year,—Dr. Benj. D. Walsh, of Rock Island, Illinois, to whose careful observations and ready pen the *Entomologist* is largely indebted for the valuable matter which fills its pages.

In his "salutatory," Dr. Walsh says: "What little I have hitherto done for the *Practical Entomologist*, has been done without any pecuniary benefit to myself, and solely with the object of furthering the interests of science, by proving to the people that scientific truths are often of real, practical, dollar-and-cents utility. Whether my present position will be continued beyond the current year, will depend principally upon whether the American people endorse my poor efforts for their benefit by subscribing liberally to the *Practical Entomologist*.

We therefore take pleasure in publishing and endorsing the foregoing recommendation of "S. H. S.," which we may be permitted to say comes from one of the ablest and most devoted entomologists of New England.

For the New England Farmer.

"GOOD ADVICE."

I was interested in reading the article in the FARMER of Oct. 27, with the above heading, and being a practical mechanic old enough to have worn glasses, and to be the father of five boys who are old enough to be thinking of going to learn trades or something else, I presume to offer a few hasty words upon the same subject.

The "extreme scarcity of boys who are desirous or willing to learn some good trade" is owing to some other reasons, in part at least, besides those named, i. e., disinclination to learning a trade requiring time and patience, and the absorption of so many by the war.

The general use of machinery to so much greater extent than formerly, has, probably, done much more in producing the result than any other one thing.

When I was in my teens, the cabinet business—for example—was carried on entirely "by hand," and from three to seven years were *required* for a smart boy to become a "skillful workman." The lumber, hard and soft wood, was sawed off the proper length, sawed or hewed the right width, planed the right thickness, scraped, filed, pomaced and sand-papered the right smoothness, all "by hand;" and a deal of elbow-grease, time and patience it required. But while doing it, a great amount of mental and physical discipline, besides the dexterous use of all manner of wood-worker's tools was required; so that when an apprentice *graduated* he was expected to know something useful, and to be ready to commence the doing of it. With his "kit of tools," and a hundred feet of lumber he could set up cabinet business for himself, if his "intended's" father would let him have room in his woodshed to set up his bench. He was an independent man, and could make and finish ready for use any article of household furniture, whether bureau, locker, side-board, book-case, table, light-stand, wash-stand, bedstead, chair, settee, cricket, clothes-horse, bread-trough, rolling-pin or cradle!

But now, where could a boy go to learn such a trade? Everything is done by machinery. The manufacturer don't want any apprentices, he gets his bureaus, tables, bedsteads, sofas, &c., all made by the piece, and he hires hands to *tend machines* rather than to make furniture. A boy may go into his factory (not shop) and tend his machines while the machines make the furniture, from fourteen to twenty-one years, and when he gets through, he don't know enough about the use of tools to make a decent milking-stool. And so of many other trades. But still, boys are wanted, and why the scarcity?

Another reason is, that the parents of the *best* boys do not want to have their sons go into such company as is found in too many shops, where swearing, drinking sabbath-breaking, gambling, and all sorts of licentiousness are common. It is no less true now than heretofore that "evil communications corrupt good manners" and good morals! and if manufacturers want apprentices, and such ones as will be "good, and stay," they must be more careful as to the company they put them into.

Such manufacturers as Messrs. Fairbanks, of St Johnsbury, Esty & Green of Brattleboro, Vt., and numerous others, who will have no apprentices or journeymen but such as cheerfully comply with their wholesome moral regulations, find no difficulty in getting all the apprentices they want.

No boy, who has been well brought up,—and such make the best apprentices—will desire to go into any shop of an opposite character, however much he may desire to learn a trade. The boys who are not so well brought up are the ones, most generally, that would go into the stores, offices, &c., where they will have more leisure and less labor, more temptation and less restraint.

To sum up the whole case, without going further into particulars, the great trouble is the multiplicity of machinery and the laxity of morals.

It is a broad subject, and one that ought to concern farmers, as they raise many of the apprentices. But knowing that editors dislike long yarns, and that others are better opinioners than I am, I will stop, with the wish that some expert would spin a thread in regard to another subject, so directly bearing upon this, that is, the *scarcity of children*,—three children in a family, now, being as rarely found as *six* or *eight*, thirty years ago! RADICAL.

REMARKS.—Our correspondent closes, with an allusion to a very important subject, and one which is arresting the attention, and exciting the fears of the well-wishers of our country and of our race.

For the New England Farmer.

PEAT.

The present is the best time to throw out peat for manure. If it is thrown out in the summer, much of it will become dry and hard—more fit for fuel than for manure. Every one familiar with the use of peat, knows that when it has once become dry and hard, it is very difficult to reduce it to that degree of fineness that will enable it to mingle with the soil. Who has not seen pieces of peat tumbled about for two or three years, by the plow and harrow? And when it crumbles, it is into granules almost as hard as pebbles. The value of peat as a material for the compost heap, is now generally admitted, but its proper preparation is not so generally known or attended to. One load of fine dry peat is certainly worth two loads of green peat; and it is an important question, how can it most economically be reduced to that state of fineness and dryness that fits it to mingle most readily with barn manure, and absorb the greatest amount of urine. In this state it is much more easily handled and transported, and if it is to be spread on the soil and ploughed in, or to be spread as a top-dressing, it can be spread more evenly and more conveniently. Peat should be thrown out at least one year before it is to be used. If it is thrown out at a season when it will be exposed to freezing and thawing, it will soon become fine and mellow. It should be put in heaps of moderate depth, so that the frost may penetrate to the bottom of it. It should be thrown over, and the lumps broken, and heaped up into a compact form in the spring, when the frost has left it, and in a year it will be fit for use. The action of the air disintegrates and sweetens it. In this state it may be used as a top-dressing for grass land to great advantage, especially on dry, sandy lands. In this state it becomes the best deodorizer the farmer can use about the hogstye, the privy, the hen-house or the stable. It absorbs and retains a large amount of liquid, and readily mixes with and helps to disintegrate the barn manures. Every one who has used an old ditch bank that has lain exposed to the action of the frosts for several years, knows how much better it is than peat that has just been thrown out. Last year I used peat from the surface of a meadow that had been planted in potatoes two or three years. It was very mellow and gave me entire satisfaction.

In preparing peat for fuel, the surface should always be taken off to the depth to which the frost usually penetrates, as this portion always dries in a loose crumbly state, showing the disintegrating power of the frost. Peat from some localities contains so much acid that it is unfit for manurial uses until the acid is neutralized by the action of the rain and air or by alkalies. Peat of this description may be readily prepared for use by the help of quick lime. The best way is to make a bed of peat six or eight inches thick, and spread over it a quantity of unslaked lime; then cover this with a layer of peat; then another portion of lime; then another layer of peat,—using a cask of lime to about a cord of peat. The lime is slaked by the moisture of the peat, and the vapor given off pervades the whole mass, as yeast pervades the whole lump, mellowing and sweetening it. Peat prepared in this way makes a good top-dressing for grain or clover. It is good economy for every farmer to have a year's stock of peat on hand to which he can resort when it is wanted, and never to use it until it has been exposed to the atmosphere at least one year. From the convenience of handling and transportation, this will be found more economical than the use of green peat. If a portion of it is kept under a shed or roof, that it may always be dry, it will be the most effectual deodorizer and absorbent within the farmer's reach, and will richly repay the trouble required. If a good supply of dry peat is always on hand, much more will be used than at present, and consequently more good compost will be made. Fine dry peat is one of the best fertilizers for strawberries, grapes, and the small fruits generally, and is always ready for use, and may be conveniently applied at any season. It is not volatile, and is not lost or wasted when left on the surface of the ground, like ammoniacal manures. Mr. Bull, the originator of the Concord grape, is extending his grape culture, and has engaged a thousand loads of peat to be brought on to his grounds, that he may have a supply of fine peat on hand.

We commend this subject of the proper preparation of peat, to the attention of all economical farmers in New England, where peat so universally abounds, and where manures are so universally needed. R.

Concord, Mass., Oct., 1866.

RAISING FOREST TREES.

Gathering Seeds.—Seeds should always be gathered in dry weather, and those kinds which are enclosed in an outer covering, like the butternut, should be spread out in an airy situation until they are quite dry, before being packed for transportation. It is also advisable to dry all tree seeds a little, but it must be varied according to the size and natural amount of moisture they contain. Those that possess a large amount either in their covering or in the seed proper are liable to heat if packed in close air-tight boxes. Baskets and bags, or boxes with small holes bored in them, should be used for the purpose, especially if the seeds are to remain in them for several days. Sheets of paper, or layers of dry moss, may be placed between the layers of seeds to absorb the moisture, when necessary to pack the seeds before they are sufficiently dry. These remarks only apply to the larger seeds and those that naturally contain considerable moisture at the time of gathering.

The smaller seeds as well as larger ones that are inclosed in a dry covering, such as the alder, spruce, and pine, among the smaller, and beech and hickory among the larger, may be transported in bags, barrels or tight boxes; all that is necessary is to keep them dry while on transit.

Preserving Seeds.—Seeds that have a firm, horn-like covering, like the locust, virgilia, etc., generally retain their vitality the longest, while the seeds of the maple, elm, and similar trees that have a very porous covering, are comparatively short-lived. The size of the seed is no indication of its vitality; the largest may perish much sooner than the very smallest.

The black walnut, horse chesnut, and butternut will seldom if ever grow after the first season, while the virgilia and locust, which are quite small, will germinate after having been kept for a dozen years. The vitality of all seeds may be retained for a much longer time than was evidently intended by Nature, if they are placed under the proper conditions. A cool, dry, and equal temperature appears to be the best adapted for the preservation of all seeds. The humidity of the atmosphere has also much to do in enabling them to retain their vitality, for while a warm, moist one is just suited to growth, it hastens the death of the seeds. For when the germinating powers of the seed have once been excited into growth, it cannot be checked without injuring, if not wholly destroying, its vitality. A warm, dry, atmosphere evaporates the moisture, causing them to shrivel, and thus destroys them.

Some seeds, as the chestnut, contain such a large amount of albuminous matter that it is quite difficult to keep the temperature and humidity of the atmosphere just in the right state for their preservation. All such seeds should be placed in the ground, or on it, soon after they are ripe, and covered with leaves or some similar material, following Nature's method, as they receive there the proper degree of warmth and moisture requisite to their preservation, better than in any other situation.

Time for Sowing Seeds.—There can be no specified time given for sowing all kinds of tree seeds, but for a general rule, very soon after they ripen is the best. It is certainly not always convenient to do so, nor is it always necessary, but with some kinds a delay of a few weeks is almost certain to result in a complete failure. Some kinds of seeds retain their vitality for years, while others for only a few months at most.

The want of specific knowledge upon this point has been the cause of many failures, and will probably continue to be so until more general information is disseminated.

The red and silver maple ripen their seeds in spring or early summer, about the first to the middle of June in this vicinity, and they retain their vitality for only a few weeks. If sowed so soon as ripe, they will come up in a few days, and make a growth of one to three feet by the time the sugar and Norway maple seeds are ripe in autumn. These two varieties of maples are among the few forest tree seeds that absolutely demand immediate planting, and then they grow very readily.—*Fuller's Forest Tree Culturist.*

BARNS—MARKET REPORTS.

I lost considerable from not having barn room for all my barley. That which was stacked out of doors was weather-stained, and will not bring so much by 10 cents a bushel, as that put in the barn—though fully as good a sample in other respects. My loss this year from stacking would pay the interest on a good sized barn.

It annoys me to see farmers sacrificing their barley, simply for want of correct information. Large quantities have been sold in this section at 85c. to 90c. per bushel, and a dollar is about the outside figure for choice four-rowed. Farmers seem to have been seized with a desire to sell at once, and have rushed in the crop and taken just what they could get, from the idea that as the yield was large, prices must be low. But they forget that hitherto a great portion of our barley has been brought from Canada, and that, large as the crop is with us, it is not large enough to supply the demand, and that the deficiency must be obtained from Canada. The price at which Canada barley can be bought, therefore, will determine the price in this market. At the time when farmers were selling here from 90c. to $1.00, barley in Toronto

was worth 60c. in gold—say 90c. in our money. The duty is 15c. more, also in gold, say 22c., and the expenses of buying, commission, freight etc. are about 20c. more, so that a Rochester maltster cannot get barley from Canada for less than $1.32 per bushel. Had our papers given this information, they would have saved the farmers of Western New York over a million of dollars. As it is, we have lost all the benefit of the duty on barley.—*Joseph Harris, in American Agriculturist.*

PRESERVING MEAT.

The following is the *Knickerbocker Pickle* as given by Judge Buel in the Albany *Cultivator* for October, 1835. We have tried it ourselves several times with good success, using, however, only about half an ounce of saltpetre instead of three ounces, as recommended.

Take six gallons of water, nine pounds of salt, three pounds of coarse brown sugar, one quart of molasses, three ounces salt-petre, and one ounce of pearlash—mix and boil the whole well, taking care to skim off all the impurities which rise to the surface. This constitutes the pickle. When the meat is cut it should be slightly rubbed with fine salt, and suffered to lay a day or two, that the salt may extract the blood; it may then be packed tight in the cask, and the pickle, having become cold, may be turned upon and cover the meat. A follower, to fit the inside of the cask, should then be laid on, and a weight put on it, in order to keep the meat at all times covered with pickle. The sugar may be omitted without material detriment. In the spring the pickle must be turned off, boiled with some additional salt and molasses, skimmed, and when cold, returned to the cask.

For domestic use, beef and pork hams should not be salted the day the animals are killed, but kept until its fibre has become short and tender, as these changes do not take place after it has been acted upon by the salt.

HORTICULTURAL HINTS.

Fuschias, commonly called Lady's Eardrop, are easily kept throughout the winter, and if planted where they receive only the morning sun, form one of the most beautiful of summer-blooming plants that decorate the garden. When taken up in the fall, all that is requisite is to see that the roots are covered in the soil, and that during the winter they are just a little moist, never wet, and always free from frost. An ordinarily dry cellar, dark, will generally keep them perfectly, without any attention.

In forming footpaths or carriage-drives in a new place, if you have not obtained the advice or aid of a landscape gardener, which you should have done, be careful not to get the curves too strong. A crooked path is, if anything, more objectionable to the eye of taste than a straight line. Let all your curved lines exhibit a reason for diverging from a straight course, and let that reason be apparent to the mind of the most thoughtless.

Always have a work bench in your wood shed or a part of your barn, if you cannot afford a room purposely as a tool and work-room. A few tools of the common kinds, saws, chisels, planes, &c., will enable you to fit up and repair, or make many a thing that if you had to hire a carpenter, you would never think of having, because of its cost. Labels, stakes, melon boxes, &c., can be made up in stormy days of fall and winter, at a great saving.

All clay lands, and we may say all good garden lands, if dug or plowed deeply, and turned up rough, and exposed to the winter's frost, will improve in quality full as much as the covering of one coat of manure given and worked in in spring.

All the paths around the house and grounds should be carefully cleaned this month, and any little repairs requisite to comfort about the house and grounds made, that comfort and security from storms, &c., may be had during the cold frost and storms of winter.

As every ruralist is supposed to have a horse and cow, we must remind them that warm and dry stables are a great preservative of their health, and that all saving of animal heat, by having a warm room, is a saving of food.

Bean poles, dahlia stakes, &c,, should be gathered together, and stacked away carefully for another season.—*N. Y. Horticulturist.*

Keeping Cabbages.—Cabbages in the spring are a great scarcity, yet there is no reason that they should not be as plentiful then as in the fall. Only a little care is necessary. We have generally kept them fresh and crisp through the winter, and the plan we adopted was this. We dug a trench out of doors, about three feet deep and boxed it all around with loose boards. In this we put the cabbages, standing them on end with the roots downwards, not allowing the heads to touch. The whole was then covered with boards, placing them close enough together to keep out the wet; the earth was then heaped upon the top, forming of course a mound of about two feet in height. In this state the cabbage kept all winter long in most excellent condition. No frost reached them and they were as fresh in the spring as when first put away.—*Fredericton Farmer.*

Mr. B. F. Allen, of Vienna, writes to the *Maine Farmer*, Nov. 8th, that he now has five lambs,—three bucks and two ewes,—which were dropped last June by one sheep. The lambs are very similar in appearance, and are nearly as large as lambs usually are of the same age.

PRUNING APPLE TREES.

I perceive that you and the Editor of the *Manchester Mirror* do not agree as to the best time for pruning apple trees. Will you please publish your reasons for preferring the autumn to the spring for that purpose, and oblige yours truly. JONA. K. SMITH.

Dublin, N. H., Nov., 1866.

REMARKS.—Certainly, and with pleasure, although it will be an "oft-told tale." The opinions we shall give are based, *first*, upon a long and careful study of the *physiology of trees*,—that is, a study of their organs and functions. *Secondly*, the *corroborative* evidence of the highest authorities on the subject, in this and other countries. And *thirdly*, a practice which has been continued nearly twenty years, in pruning trees at all seasons, carefully watching the effect of the operation upon them, and *making a record of the facts.*

When we graft an apple tree we change its habit. It then becomes, in a considerable degree, a thing of art, and must be treated afterward in an artificial manner. It assumes new forms in its growth, has smooth and more delicate branches, loses its sharp spikes or thorns, has a larger and finer foliage, and is less able to bear injuries or extreme temperature. Consequently the tree requires a more delicate handling.

There is now frequent complaint that the orchards of New England are rapidly failing. It is no doubt true that they are failing, altogether too fast. One leading cause of this is cropping them too heavily with grass and other crops, and another, pruning them unskilfully and at a *wrong season of the year*. We will say nothing of damage done by insects, at present.

Nearly all the orchards of New England that are twenty-five years old and upwards, present the clearest evidence of premature decay. Our fathers probably pruned apple trees in March and April, because they found it a comparatively leisure season. Most of it was done in March. But in this age of progress their sons ought to know better than to begin the destruction of their orchards just as they are coming to maturity. There is just as much a proper time to prune apple trees as to prune grape vines. Who ever heard of pruning the latter in March or April? And yet the principle involved is the same. Nature works alike in each, so far as the circulation of the sap is concerned.

The true rule for pruning is a simple one. *Prune when there is the least sap in the sap vessels, or sap wood, as it is called.* That occurs about midsummer, when the thin watery sap, having visited the most remote twigs and leaves, has become elaborated into a substance entirely unlike that which so recently passed up, and is going down directly under the outer bark of the branches and trunk of the tree, and plainly increasing their diameter. This is the favorable time to prune, because there is comparatively little sap left in the vessels to run out if they are cut off. This period occurs not only about midsummer, but in the autumn after the leaves have fallen, and will continue until warm and genial days intervene, when the sap will sensibly feel their invigorating power, and especially so if the ground at the time is not frozen. If a succession of warm and sunny days occur in February, the sap will start where trees stand in sheltered places, but open to the south.

A bright sun has a wonderful power upon trees. It makes the sap active at once, but it seems to become dull again on the approach of cold,—acting, in this respect, much as animals do in sudden changes of temperature. When set in motion by a proper degree of warmth, the tree goes directly about its work, roots and branches co-operating with each other. A thin, watery fluid is collected by the fine roots, and by some wonderful agency carried along through innumerable tubes, or sap-vessels, as they are called, which are in the wood that lies next to the alburnum, or that white, soft substance between the outer bark and the hard wood. First comes the outer bark, then alburnum or sapwood, and lastly the heart of the tree where no sap-vessels can be found.

As we have said above, the roots begin to fill these sap-vessels upon the approach of clear suns and warm weather, and the sap is carried by them to the remotest branch and smallest twig of the tree. Buds were formed the preceding year, and are ready to receive and use the sap as it comes along to them. If they are blossom buds the sap expands the blossom, if leaf buds it establishes the leaf, and then the tree is ready to go to work to increase its length and size in diameter.

The bright days in March usually excite the tree to decided action, and this continues until near mid-summer, or until the leaves have nearly attained their full size. Of course, ev-

ery sap-vessel is full of a thin, watery fluid intent on its errand to furnish every branch and twig its needed supplies, and swelling and pushing every bud to its utmost size and power of action. *Such is the condition of the tree in the spring.* Is it, then, a proper time to prune it—to cut off thousands of these sap-vessels and cause them to pour out the fluid which the whole tree is waiting for, and cannot live without? It needs no argument to show that trees cut when in such a state must bleed.

But the loss of the sap to the tree is not all —perhaps not the worst of it. As the sap flows out and comes in contact with the atmosphere, it becomes pungent and bitter, and poisons the tree, wherever much of it runs. The face of the wound becomes black, and is sometimes partly covered with a grayish-black mould or fungus. If the sap runs down upon the bark it is so powerful as frequently to destroy it in to the wood, turning it black and giving it an offensive taste and smell. When this is the case, the sap-wood soon becomes inactive and dies in turn.

These statements are made not from the results of single cases or experiments, but from thousands of cases, extending through many years. A single tree has been practiced upon for ten years in succession, pruning some portion of it at different seasons, and the results have been uniformly as stated above.

Now let us turn to the other side of the question.

The tree has been left untouched. The sap has gone on in its course rejoicing, and has imparted life, action, beauty and vigor to every part of the tree. Buds have swollen, blossoms expanded, and the tree is covered with large and healthy leaves. These are the lungs of the tree. They have been formed for action, and now comes the time for the performance of of their part of the duty of building up that wonderful thing which we call a tree.

The petals of the blossoms have fallen, fruit is set, and the tree requires some aliment more nutritious and substantial than the thin sap which was first sent up. The leaves prepare this. They receive the sap stored up in the cells, work it over in their laboratories, and send it back, thick and energizing, to give breadth to the trunk, and stoutness and strength to the branches. But this *does not pass through the sap-vessels*, but outside of them, between the sap-wood and the outer bark. This is called the alburnum, and makes the annual growth in the diameter of trunk and branches.

Now prune the tree, and what will happen? There is little fluid in the sap-vessels. It has mostly gone off to do its work among the branches, and hundreds of them may be taken away without the slightest appearance of sap. This has been verified in hundreds of instances in our practice. An examination of as many trees to-day, will confirm the statement.

There is still another advantage in pruning after the leaves are fully formed. The inspissated or thickened sap is descending, and will at once commence a covering of smooth, green bark over the wound which has been made. Some of the small places will be covered the same year, and those of an inch in diameter in healthy trees will be covered the second year.

So far as the flowing of the sap is concerned, these conditions exist in the tree after the leaves have fallen in the autumn, and they may then be pruned consistently. The surface of the wounds will dry before the sap flows in the spring, so as to prevent its passing out. All wounds, however, should be covered with paint, or what is better but more expensive, gum shellac dissolved in alcohol.

The observing farmer always has the true rule for pruning before him. It is this. *Never* prune when your saw will keep bright and clean. *Always* prune when the saw "gums up," so that it becomes necessary to wash it occasionally in order to have it run easy.

The collateral evidence that these conclusions are correct is abundant and conclusive. We have enough of it before us to fill a page, but our article has grown so long that we defer citing much of it at present. Prof. LINDLEY has given the best portion of his life to the study of plants and particularly trees. He says,—"The only mode of avoiding bleeding is never to wound trees when their first sap begins to flow; after a time the demand upon the system by the leaves becomes so great that there is no surplus, and therefore bleeding does not take place when a wound is inflicted."

On all matters of this kind, DOWNING is usually recorded as a safe guide; let us see what he says in relation to the particular time of pruning. In his work on the "*Fruits and Fruit Trees of America*," he says, "we should *especially avoid pruning* at that period in spring

when the buds are swelling and the sap is in full flow, as the loss of sap by bleeding is very injurious to most trees, and in some brings on a serious and incurable canker in the buds." Again he says, "our own experience has led us to believe that practically a fortnight before mid-summer is by far the best season on the whole for pruning in the Northern and Middle States. Wounds made at this season heal over freely and rapidly." Both these authorities state that winter pruning may be safely done. We do not recommend it, as it is too nice work for cold and windy weather.

WOOL GROWERS' CONVENTION.

The convention of the National Wool Growers' Association held at Cleveland on the 14th of November, was largely attended and its action was harmonious and spirited. We have not yet seen a full report of its proceedings and speeches. By a letter from W. F. Greer, Secretary of the Association, we learn that twelve States were represented by authorized delegations. A committee consisting of Hon. E. B. Pottle, of New York; Hon. Edwin Hammond, of Vermont; Hon. Victor Wright, Representative of the New England Wool Grower's Association; Hon. Norton S. Townshend, of Ohio, Dr. F. Julius LeMoyne, of Pennsylvania; Franklin Fassett, Esq., of Illinois; Eli Stillson, Esq., of Wisconsin; Lewis Willey, Esq., of Michigan; were appointed a committee to draft resolutions expressing the views of this Association relative to the Tariff upon wool and woolens, who reported the following, which were severally discussed, and *unanimously* adopted:

Resolved, That we believe that the steps taken by the National Association of Wool Growers and Manufacturers to secure a recognition of the mutuality of their interests, will, if followed out in good faith, insure the increased prosperity of both.

Resolved, That the citizen who bears the burdens of the Government is entitled to the advantages of the markets of his own country—and to compel him to pay for the privilege of such markets more than is required of foreigners, is unwise, unjust, and in the end will prove disastrous.

Resolved, That the tariff bill, as it relates to wool and woolens, agreed upon by the Joint Committee of Wool Growers and Wool Manufacturers, now before Congress, is one calculated to insure increased prosperity to the grower and manufacturer, and will tend to the general prosperity of the country, and that we will stand *firmly* by it, and seek by all proper means to secure its *early* adoption as a law.

Of the character of the convention Mr. G. D. Bragdon, a correspondent of the *Rural New Yorker*, writes,—"I have never seen a body of industrious men of equal number together, whose appearance, demeanor, and intelligence excelled that of this Association gathered here. The men embraced in this Convention were mostly men of fine physical character, with mental calibre and force to correspond. The temper of the Association was excellent. Every man meant business; every word was full of self-asserting emphasis. And if the influence of this Convention is not felt in Washington, it will not be because of any want of force in its composition and action."

NEW PUBLICATIONS.

THE FOREST TREE CULTURIST. A Treatise on the Cultivation of American Forest Trees, with Notes on the Most Valuable Foreign Species. By Andrew S. Fuller. Illustrated. New York: Geo. E. & F. W. Woodward. Boston: A. Williams & Co. 1866. Pp. 188. Price $1.50.

Since preparing our remarks upon this subject, on another page, we have received a copy of the above named work. The author is a practical horticulturist and has given considerable attention to the cultivation of forest trees. Though he does not claim to have raised trees of all species and varieties, he says he has experimented sufficiently to know whereof he writes. As specimens of the style of the book, and as containing valuable information, we copy a few paragraphs on gathering, preserving, and sowing the seeds of forest trees, which will be found in this number of the MONTHLY NEW ENGLAND FARMER.

THE OLD FARMER'S ALMANAC FOR 1867. Established in 1793, by Robert B. Thomas. Boston: Brewer & Tileston.

Though his hair may be turning gray, what New Englander is not reminded of some scrap of poetry or anecdote stored up in memory from the pages of this familiar annual, as his eyes fall on the image of Father Time, whose urn still flows as freely as in days of yore? As we look, up come a verse that we could no more forget than we could the name of Robert B. Thomas:

> "Landlord to thy bar room skip,
> Fetch a foaming mug of flip;
> Make it of our country's staple,
> Rum, New England; sugar, maple."

If not exactly tee-total, that is at least patriotic. Great then is the responsibility of those who furnish reading matter for the young, even so much as an almanac contains! To a proper appreciation of this responsibility we believe the Old Farmer's Almanac is greatly in-

debted for its unexampled prosperity during the last seventy-five years. And we are confident that a comparison of the later with the ealier numbers will furnish strong confirmation of the sentiment which heads the calendar for December, 1867:

> The world improves; with slow, unequal pace,
> "The Good Time's coming" to our hapless race;
> The general tide beneath the refulgent surge
> Rolls on resistless to its destined verge.

AGRICULTURAL COLLEGE.

The Executive and Building committees of the Agricultural College of Massachusetts, at a meeting, Nov. 21st, voted, as we learn from the *Amherst Express*, to have the College ready to receive students on the first of September next." Abandoning the idea of one large structure, the committee have adopted the plan recommended by Mr. Olmstead and Judge French, and have decided to erect five small buildings: 1. a dormitory for 50 students, with recitation rooms; 2. a chemical laboratory; 3. a boarding house; 4. a model barn; 5. a President's house. The whole estimated cost of these buildings is $65,000. The *Express* says: "the utmost harmony of purpose prevailed at the meeting, and every one of the trustees seemed determined to do his part to make the College popular and successful. President Chadbourne shows himself to be fully competent to the position and is fast bringing order out of chaos. He promises to and doubtless will, within nine months of the time of his election, have the College in operation."

CARE OF BEES IN WINTER.

If the weather is cold and snow has fallen, all stocks should be put into winter quarters. I am often asked "What is the best method of wintering bees?" I would say, any method that will secure the following conditions:—an even temperature, neither too cold, nor too warm; proper ventilation; freedom from moisture; perfect darkness and quietness. A good cellar or room away from the fire may answer very well, or a house built for the purpose would probably be still better. To secure proper ventilation with common box hives, they may be inverted, and wire cloth, or stiff net tacked on the bottom of the hives to keep the bees in. Moveable comb hives should have the honey board removed and wire cloth or stiff net put on in its place. Stocks that are to be wintered out of doors, if in box hives, should be so ventilated that there will be no danger of the ventilation being closed up by snow or ice; if in moveable comb hives, all under ventilation should be closed up, the honey board should be removed, and after putting on the wire cloth, it should be covered with corn cobs or dry straw—all that the cap or cover of the hive will shut over. It having been a very bad season for bees, where natural swarming was allowed, nearly all swarms will require feeding, and if not already fed, should at once be removed to a warm room and fed enough to winter them, so that it will not be necessary to disturb them during the winter. It would be better to feed a stock two dollars worth of sugar, rather than lose it. Where artificial swarming was practiced, and swarms were made early, not much if any feeding will be necessary. I would impress upon the minds of bee-keepers generally, the necessity of examining their stocks, as many will perish if not fed, and though feeding should be attended to in September, yet, by following the directions given above, many stocks may be saved even now.—*J. H. Thomas, in Canada Farmer.*

For the New England Farmer.

PRESERVING MILK AND RAISING CREAM.

Among the other celebrities at the "Weld Farm Festival" of last July, was a Mr. N. W. Clark from Detroit, Michigan, who was at that time travelling in the Eastern States for the purpose of introducing a new and patented invention of his, for the better preservation of milk, butter, eggs, &c. Both of us happening to be an hour or two ahead of the appointed time, I had a chance to examine his plans and drawings, and to hear from him a detailed account of what he claimed to be new discoveries in the art of preserving milk and making butter.

Mr. Clark has erected in Detroit a very large building for the purpose of supplying sweet milk to the city. It consists of a two story ice-house, the upper floor of which is of galvanized iron, on which the ice rests. In the lower story are large tin cans for holding the milk. These are placed in tanks that are constantly full of cold water from the melting ice above. The cans are filled from an office room through a funnel which passes through the thick walls of the preserving-room. A pipe and faucet from the bottom of the cans, also reaching through the wall into the office, allows of the milk being drawn out for sale, without the attendant's entering the cold apartment. The milk can be cooled down to the temperature of 34°.

The cans each contain an agitator which is moved by a small steam engine. When cream is to be taken off and sold separately the agitator is not used.

Mr. Clark claims that he can keep milk sweet a whole year if he chooses. As it never gets sour, the cans do not require to be washed. The conducting pipes are arranged with valves,

so that they may be cleansed, which is done by swabbing out with lime water.

He also claims that lime water is better than hot soap-suds to clean and purify all milk utensils; an experiment I have not yet tried, but intend to. He says he has found out many new things about the nature of milk and butter. He claims that milk several feet deep will throw up all its cream in twenty-four hours at a temperature of 34°, only 2° above the freezing point.

Having occasion to make some alterations in my fall and winter milk-rooms, while waiting for paint to dry before using them, I found it convenient to try the experiment of keeping milk in a cold room while the cream was rising. I have used my dwelling-house cellar for milk during the warm months, keeping the windows constantly opened to admit fresh, pure air. This season I kept my milk in the cellar till into November, letting the windows remain open as usual, with the temperature some mornings down to 40° and less. And I am satisfied I shall not try that experiment again at present, unless I am obliged to. I find I have lost as much as 15 per cent. of the cream, by letting it rise in a cold room. Then it takes twice as long to churn sweet cream as it does that which is sour and thick as cream will be, if kept in a warm place.

I am not entirely satisfied yet that an underground cellar is the best place in which to keep milk at any time of the year. Mr. Jason Tower, a very successful butter maker, of Franklin, Mass., has kept his milk on the first floor above the cellar all through the hot months for several years past, having a slat floor to allow some circulation of air between this and the cellar room below.

He thinks his upper room is a little too warm during the hottest weather in July and August, but he certainly has been able to make a considerably larger amount of butter per cow during the season, than I have, although other circumstances do not seem to be much in his favor. A. W. Cheever.

Sheldonville, Mass., Nov. 15, 1866.

For the New England Farmer.

MY DRAIN TILE.

Mr. Editor:—I have just had a little experience in draining under difficulties, which I will state to you.

One corner of my farm has been very wet. The top soil is a tenacious mud. Next comes a thin, clayey stratum. Under this is a very lively quicksand. An open ditch has been kept through the centre, the slope of the land being sufficient to give the water a rapid run. Last fall this ditch was cleaned out a little too deep, reaching into the quicksand a good part of the way. Heavy rains followed, making a strong brook in the ditch. This carried off the quicksand to such an extent that in some places the banks were undermined on each side for four or five feet, and fell down. I think that not less than one hundred cartloads of this under soil, were, during the fall and winter, carried to the lower level, thus making a very wide chasm in the field, and filling up the ditch on the more level ground for some forty or fifty rods; and any attempt to clean out this lower portion would set the sands in motion to fill it up again. To prevent this for the future, I have laid tiles in the ditch. This was not an easy job, owing to the liveliness of the quicksand. To keep this from flowing into the pipe, I placed bog moss at the joints, and filled up with the surface sods pressed around the pipe. Great caution had to be used to make the packing so compact that no current could run outside the pipe. In the softer places it was necessary also to lay a board on the bottom to keep the pipe steady. There are side drains leading into the main one, in all of which this quicksand was more or less troublesome.

At present, so far as finished, the drain works to my great satisfaction. The water flows freely, and the land is already perceptibly drier than I have known it in the driest times for more than twenty years. But I have one cause for fear, that I have seen no account of elsewhere. There is constantly growing in the pipe a slimy fungus, that collects and comes away in masses. I have several times pulled it out of the pipe with a stick. A few days ago I found a good half bushel of this matter collected near the mouth of the pipe. Some pieces were more than a foot long, and as they lay closely in the water, were at least an inch in diameter. My fear is, that at some time this will collect in the pipe in sufficient quantity to obstruct the water. I think it has already, at least once, temporarily choked the pipe near the upper end, as the gravel carted to fill up the ditch was for a short distance so saturated with water that a man would sink over shoes in it. But that soon became drier. There is, however, fall enough to bring a strong pressure of water against any obstruction, and I hope this will keep it clean.

Have you, Mr. Editor, ever seen anything like this in your experience? Can anything be done to prevent the growth of this fungus?

Concord, Oct. 22, 1866. M. P.

For the New England Farmer.

WINTER RECREATIONS.

As a general thing, farmers labor too unceasingly; spend too little time in recreation with their families. Many so arrange their work that a rainy day finds them with as much on hand as at any other time. Summer and winter is the same with them; the system always strained to its utmost capacity, either in physical labor or in planning for the future. Now, while it is well to be diligent in business, and to have an eye to the future, a constant tension wears out elasticity, the system becomes

prematurely old, and the aim of life is often defeated.

A man dependent upon his labor of to-day for his bread of the morrow, must necessarily be more economical of his time than he who has a comfortable property ahead, and labors to add thereto; but often, here, we find that the man with the least of this world's goods takes more recreation and enjoyment than his more worldly and better-to-do neighbor. By his recreation he loses nothing, for he is better able to accomplish a certain amount of labor in five days, than he whose system is strained to the utmost by constant labor is in six days. His recreation relaxes the strain and gives him rest, so that he is better prepared to perform a given task than in the other case. In summer, when crops and fields require a more constant attention, little time can be afforded, although a relaxation of a day occasionally would be refreshing. The winter is also a busy time with the thriving farmer, but there are times when a day spent in recreation is less felt than during the other seasons. The long evenings and short days give the farmer more time to recruit the system for the next season's work; and to the proper improvement of these evenings he must look mainly for recreation and amusement with his family.

But what shall this recreation and amusement consist in? The large class of farmers live at a distance from villages and thickly settled towns where concerts, lectures, etc., are to be enjoyed, and consequently cannot be expected often to go the distance for an evening's entertainment. In the first place then, under such circumstances, let him provide a choice selection of books, periodicals etc.,—and what better periodicals can he provide than a good agricultural and family paper?—to give food to the mind of himself and family; these read and discussed will furnish food for reflection at odd hours as well as entertainment.

If lighter recreation be desirable, get up a miniature concert,—a family generally have the elements necessary,—if the parents and older ones will relax a little and join with the younger in some innocent amusement. This may combine instruction to the young, as well, and will be enjoyed by all. A social family call at a neighbor's, of an evening, to be spent in social converse, singing, innocent games of amusement, etc.

Form farmers' clubs, and meet at one another's houses weekly, not forgetting to take the wife and older daughters as well as sons along: compare notes, discuss questions of interest in a familiar way. An essay on some subject of general interest, prepared and read by one of the members, gives variety, while at the same time it improves the participators in composition, etc. To give the female portion time to participate in such entertainments, without inconvenience, provide suitable conveniences for them to perform their daily tasks; a sewing machine to do up the sewing without that "everlasting stitch, stitch." Other provisions there are which will suggest themselves readily to the thoughtful, which should be made to give the women an opportunity of better enjoying any recreation. Provide them, and lighten their toils and cares.

The farmer can at other leisure times make a plan of his farm; a record of his operations on each field during the past season, to be studied over and improved upon the next. A complete farm record and account kept and well studied, will give a farmer a better insight into, and a better understanding of his business, than can be obtained in any other way; and relaxation will be found in making it up and in its study.

The farmer has the means of making his lot the most agreeable and delightful of all pursuits, if he but so wills it; while on the other hand he can make it quite the reverse. Let us then make a proper use of the faculties that nature has endowed us with, and make ourselves and our families comfortable and happy; and at the same time make farming a pleasing occupation desirable to be followed by our children. By so doing we shall hold out strong inducements to the young to remain on the farm away from the temptations of city life, where health and morals are liable to be corrupted.

W. H. WHITE.

So. Windsor, Conn., 1866.

For the New England Farmer.

MURIATE OF LIME.

Your journal being open as one of the great highways to the empire of agriculture, let us mingle with the industrious crowd and if possible, contribute some facts to the great granary of truth.

In 1858, I planted a little swell of land, naturally poor, in Lake Village, N. H., near "Little Bay." There was no spring of water in the swell. I mention this because in time of drought it would be unnatural to expect a fair crop. The garden had been under the cultivation of Thos. Plummer, Esq., for eight years previous, and treated to lime and salt, no manures being used. The venerable man had good crops and the land improved. Could I raise corn on that crown of gravel? was the question. From his instruction, I compounded a muriate of lime composted with loam, and planted 150 hills, using the compost as common dressing in the hills, and as I planted, spread about a common tablespoonful over the surface. The result was a crop at the rate of 70 bushels to the acre. The season was late and dry. Many well-manured fields in the intervale did not produce average crops. On a close examination, I found a thin sub-soil of lime had formed, by the use of the same material for several years in succession. This undoubtedly was the cause of its keeping up so well during the long, dry season.

The second experiment was at Guilford, N. H., the next year. From 52 hills (about one rod and a half,) the result was one bushel and one peck of shelled corn. Quite a number of gentlemen in Guilford and Laconia, witnessed the result, and the editor, Mr. WALLACE, of the Winnipiseogee *Gazette*, in an article on the fruitful yield, after the agricultural premiums of that fall were awarded for the best specimens of corn, stated he had a handsome show at his office raised by a gentleman in Guilford.

I have used a muriate of lime of my own preparing for several years past, with good results. This season I tried an article I had seen advertised in the FARMER and other journals, patented in February last by a gentleman of this city; it being offered at much less cost than I could prepare it in small quantities. With this I planted sweet corn from the Department at Washington. I used this new compound, composted with loam about one to six. Planted as in previous years; the result shows a decided improvement in the Muriate of Lime referred to, containing as it does some properties which proved obnoxious to worms and garden insects. From 40 hills I had 360 ears of corn, every ear filled out to the tip, and much of it was tasseled on the end and corn matured in the tassels. I used it throughout my garden, and my potatoes are perfectly sound and untouched by worms. I send you a few specimens of corn, as vouchers for my experiment. VERITY.

Cambridge, Mass., Nov. 12, 1866.

REMARKS.—With the above article we received several handsome ears of sweet corn. They are of fair size, appear to be well matured, and are not only filled to the tip, but a strong tendency is manifested to pile up the kernels one on another, forming a little ball or cap on the extremity of the cob.

For the New England Farmer.

TEA.

After reading an article on "How to use Tea and Coffee" in the issue of the FARMER of Nov. 3d, which speaks of the "nutriment" in tea, and the care necessary to obtain it, I wish to offer a few thoughts.

Being a Yankee, I would like to know the value, in greenbacks, of the nutriment in a pound of the best kind of tea? or, in other words, if the nutriment in a pound of wheat flour is worth, say 8 cts., what is the nutriment in a pound of dried tea leaves worth?

It is very common to judge of the nutriment in food by the ease of digesting it; but it would be just as correct to judge by the heat that it takes to cook it. It is still worse to judge by the degree it stimulates us. I doubt the power of stimulants to *create* vital power under any circumstances—they only call it out, as the whip does the greater speed of the horse.

It is a good rule to judge of the injury that a stimulant is doing us by the bad effects we experience when we omit it. I do not suppose that a robust person who had drank moderately of tea, would feel any very unpleasant sensations from omitting his cup of tea, but a person of a nervous or susceptible temperament who has been in the habit of drinking strong tea, would rather omit his dinner than his tea.

Of the effect of coffee I have seen less, and so will not speak of it.

Again the writer says, "unlike most cerebral excitants, tea acts beneficially rather than otherwise,—preventing waste of the whole body and especially of the nervous system." This is assertion without proof, but I think a little proof is essential before we admit it is "*unlike* most cerebral excitants." Are you *sure* it "prevents the waste of the nervous system?" and if it does, are you *sure* it is an improvement on nature? From a limited knowledge of physiology I had gathered the idea that waste was the natural result of action: but here we are taught that tea excites to greater action, and the result is a diminished amount of waste.

I do not object to any information that will aid in the preparation of tea; but I do protest against lauding a useless and sometimes injurious drink as a nutritious and beneficial excitant.

Concord, Vt., Nov. 10, 1866. H.

TAKE CARE OF THE TEGS.

November is a trying month for tegs. Its storms and rapid alternations of temperature do not favorably affect the strongest of them, if exposed to their effects, and they fall with destructive severity on those which lack strength and condition, especially if dropped late in the season. The annual destruction of tegs by a wasting winter decline is enormous. A large portion of this is due to exposure and want of proper feed in the fall. They should be housed from all cold or prolonged storms, and in damp, chilly nights.

The great secret of rearing tegs is to keep them growing from the time they are weaned until they are sheared. Pampering—high grain feed in the fall and winter—is apt to lead to destructive effects. But after the grass has been withered and deprived of its nutritiousness by frost, a small allowance of grain, pumpkins, &c., is highly beneficial to them. One of the best feeds in the world for tegs is wheat bran. In the Eastern States oats are considered a better feed for them than corn; in the West, corn is the favorite feed for sheep of every description. We think the teg as much as the breeding ewe is better for having some winter "range," and it is unnecessary to say that it requires good winter shelter.

The quality and kind of its hay feed is also a matter of the first importance. Hay of any kind blanched by rains while curing is unfit for it. It cannot be made to winter well on coarse

over-ripe timothy or clover. Grain will not supply the deficiency. The teg thrives best on *early* cut hay. It should be of fine quality. It should be cured bright and green. None need be told that the best feed requires to be given with regularity—that sheep of all ages should get water in the winter—that stables should be spacious, well ventilated, and occasionally cleared of festering accumulations of manure. With a due attention to all the above circumstances the loss of tegs in our country would be materially diminished.—*Rural New Yorker.*

HEDGES AT THE WEST.

After a full and patient trial of the osage orange, since its first introduction as a hedge plant, with careful observation of the success obtained by others with it in Iowa and Illinois, a correspondent of the *Prairie Farmer* comes to the conclusion that the hedge system of fencing is totally unsuited to the protection of fields against the droves of cattle which run at large on the Western commons, and that money, time, and labor expended on the osage orange are a dead loss. He says:

I would ask of your many intelligent correspondents if they know of a single hedge that is stock proof? I have examined them all over several of the Western States, and have not seen one that could be relied on for keeping out hogs, much less smaller animals. I have seen very many beautiful thorn hedges in the State of Delaware, and also in Great Britain; but in both these cases no stock was permitted to run at large and no such severe test could be made as we apply to hedges in this country. Had such been made, these doubtless would also have failed.

When osage orange was first introduced we were told that its thorns were so powerful and persuading, that no stock of any description would go within yards of it. This was certainly a mistake. I have seen cows run and butt at a hedge now in my sight, breaking it down precisely as they do an evergreen when they have the chance. To such an extent was this carried, that the owner was obliged to put up a wire fence outside to keep stock off; and now they poke their heads between these and browse upon it with perfect impunity.

At a late interesting discussion of this subject by the New York Institute Farmer's Club, statements were make far more favorable to the success of the osage orange as a fencing plant at the West than the foregoing. It is certainly to be hoped that the unfavorable opinion of the correspondent of the *Prairie Farmer* will prove unfounded, and that the broad prairies of the West may yet be "suitably divided" into convenient fields by a living, cattle-proof hedge. At the discussion alluded to,—

Mr. Crane said his brother fenced half a section of land in Henry County, Ill., with the osage, which is a perfect fence against all stock. When the plants were two years old, they were frozen down to the ground. The dead brush was left standing and made a partial fence, while the new shoots came up ten times as thick as the old ones, making the hedge closer and better. He has a ten-acre hog-pasture fenced in this way, which holds the animals better than a board fence. Alongside an orchard, it has been left to grow untrimmed, and is there 30 feet high. It is a valuable wind screen. A machine for trimming hedges has been invented, which will enable farmers to keep their hedges in order.

This machine may obviate one of the great objections to live fences,—the constant care which is necessary to keep them in order.

Mr. S. E. Todd said that the osage orange winter kills in New York, but that there are miles of hedges in Onondaga County made of English hawthorn, which have been in existence more than 40 years, and are perfect fences against all stock.

Dr. Trimble had known of miles and miles of hawthorn hedges in Delaware and Pennsylvania, which, after serving the purpose some years, were destroyed by insects; first in gaps that were stopped by rails; then the intervening spaces of plants were neglected, grew unsightly, were abandoned for a time, and finally uprooted.

This agrees with our own observation of the experiments which have been made in hedge-growing in New England. For some twenty years we have watched the results of experiments on the "Brooks estate" in Medford, on the line of the Lowell railroad, with several kinds of plants. These experiments, conducted at considerable expense, have resulted much as Dr. Trimble says those in Delaware and Pennsylvania have done.

WOOL RAISING IN TEXAS.

We noticed a few weeks since the departure of Dr. Boynton, for Texas, with a drove of the Vermont Merino sheep. From a letter written by him in Bell county, Texas, and published in the *Mirror and Farmer*, we copy the following paragraphs:

The profits of the business here and in the North are not to be compared. There it costs from thirty to forty cents to raise a pound of wool; here it can be produced for ten cents. But then no northern man must suppose that he can come here and rapidly grow rich by keep-

ing sheep, without labor. I yesterday saw a farmer who had made $9000 in four years from a flock of a few hundred; and at the same time I find numbers who have lost as much in as many years, because they have not given their flocks the needed care. The scab and the screw worm are the great enemies of the wool-grower in this country, and they must be fought with a watchful and tireless energy, or they will soon be the victors.

Among the most successful men whom I have met, are H. J. Chamberlain and Brother, of Bell County, who were born and reared under the shadow of "old Ascutney," in Vermont. Mr. Chamberlain came to this country in 1860, bringing with him some fine stock from Vermont, his native State. He improved the stock he brought out with him, and used it in crossing upon the best flocks he could find here, until he now grazes about four thousand head. Such has been his success in breeding, that by general consent his flock stands at the head of all in central Texas, if not in the State. His ranch contains about *twenty-one thousand acres*, well watered, and is capable of feeding, summer and winter, 40,000 head of sheep.

There are abundant opportunities for young men to secure places as herdsmen, and thus learn the details of the business as it must be carried on here, and in a few years, with only a little capital, and a good supply of pluck, they would find themselves owners of good flocks. I would, however, advise no man to come here unless he feels himself able to endure the hardships and privations of a new country.

I am satisfied that when the wool-growers of Texas will give their flocks the necessary care, they can compete with any section of the world in producing wool.

The weather here during the present season has been like the long Indian Summer days with us in the North, minus the smoky haze that always attends that season in New England.

The farmers have made a good crop of corn the past season, but only a medium amount of cotton will be secured. Many acres of cotton will be entirely lost for the want of hands to pick it. On account of the heavy rains the past season, the "chills" have prevailed extensively through this country, where they have never been known before. The blacks are great sufferers from this disease. I visited a plantation last week where twenty hands are employed, and only two are able to work. Add to this the natural disinclination of the blacks to work unless by compulsion, and you can in a measure understand the difficulties under which the planter must labor.

The people generally in this State seem to accept the "situation" with cheerfulness and courage, and are hopeful for the future. In fact, their sufferings under the Confederacy had prepared them to accept any situation, and to be thankful for any condition the United States government might impose, as they well knew the change could not possibly be for the worse. There is but little money in the country, and that gold and silver. I have not seen a "greenback" since I left the tide water. Two or three years of prosperity will put Texas all right again, and enable her to take her place among the leading agricultural States of the country.

H. B.

THOUGHTS FOR THE FIRST OF JANUARY.

E'en Winter has its charms. How pure the glow,
That decks the pensive brow of evening's queen!
The spotless hills, adorned in robes of snow,
Ascend in light and loveliness serene.
Far in the tranquil distance may be seen
The hoary forests and the mountain pile.
Shut to the door! The outer air is keen;
And 'neath the cottage roof repose awhile,
Where, round its joyous hearth, the happy inmates smile.

T. C. Upham.

January 1, 1867.—In ancient Rome there was a temple, called the *Temple of Janus*, where festivals were held on this day, each year. Janus was an old Italian deity, the god of the sun and the year. Our word *January*, was derived from his name. The Romans were great observers of the custom of New Year's presents, and the first day of January was the time when they were mostly made. The English nobility were long in the practice of sending the king a purse with gold in it, on New Year's day, and so the custom has been passed along to us by our English ancestry.

These reciprocal greetings of esteem or affection, and presentations of tokens of regard, have a purifying influence upon the mind. Reason may be joined to custom to justify the practice. We rejoice with our friends, after having escaped the dangers that attend every year; and congratulate each other for the future, by presents and wishes for the happy continuance of that course. The very wishing our friends *A Happy New Year*, will help us to make it so to them. If we, unfortunately, forget that *charity* towards them, which "beareth all things," our New Year's wishes come back to us and soften or expel our prejudice, and we repeat the wish again as heartily as ever and crown it with corresponding acts. Thus, forbearance, charity and love are often the growth of our wishes for a happy new year to others.

January is the portal of the year. How we shall enter it, and live in it, is matter of no small consideration. If we form no resolutions

for higher, purer, and more useful lives, it is doubtful whether we shall make much progress in that direction. The thought must precede the act. No month in the twelve offers more opportunities, or more appropriate ones, for mental or physical improvement.

The Rev. THOMAS C. UPHAM, of Brunswick, Maine, has written much and well upon *American Cottage Life*, and in the introduction to a charming poem, entitled *The Winter Evening*, he says:—"The Winter Evening constitutes in the farmer's life, more truly and emphatically than in the life of any other class of persons, a period by itself, a select season, a portion of time, known and recognized by its distinctive traits, and blessed with its peculiar pleasures. It is a season of the year, when there is, to a considerable extent, a relaxation from that constant toil, which occupies him in the more genial months. He is at home, in the bosom of his family; and in the exercise and interchange of domestic feelings enjoys a degree of humble happiness of which the wealthy and luxurious have little conception."

This is true, and every farmer, whatever his tastes or amount of information may be, *can*, by a little systematic effort, so turn his winter evenings to account, as to make them the road to distinction, to pecuniary profit, and the gateway to heaven! There is no school like that of the family,—none where the mind is in so genial a mood to learn, so unrestrained and capable of exercising its full powers. It only needs one steady, persistent, intelligent mind to take the lead—not a highly-educated mind. Where is the family without such an one, man or woman, daughter or son!

The *system* must be, to give a certain amount of time to the work, and fix the mind intently upon the subject before it. There will be no need of laying out a course of study; that would probably embarrass, rather than advance the object in view. Take some book upon farm work,—French's *Farm Drainage*, for instance, or Flint's *Grasses and Forage Plants*, and read and discuss, in open meeting, every chapter of each of them, until their topics are well understood. In going through either of these, other books will be referred to, from which selections may be made, and the study and pleasure continued from evening to evening. It would not be long before neighbors would be attracted to such a circle, and the amount of solid and valuable information acquired during the evenings of a single winter would surprise all; indeed, it would be more than has been gained in a whole life-time by thousands who are living to-day!

Then more begets more. The mind, having drank deeply once at the perennial spring of knowledge, would seek higher and wider sources of information, until fitted to discharge most of the duties of life, in the field, in the forum, or on the bench!

Happy the man, in winter's stormy hour,
When woods and plains with angry snows are strown,
Who is not doomed to feel their hostile power,
But hath a shelter he can call his own,
The cheerful hearth, the amicable chair.
He, with his gossip neighbors side by side,
Spreads cheerfully the *farmer's* homely fare.
They deal the mutual jest. Then venturing wide,
With patriotic zeal elate, the nation's fate decide.

T. C. UPHAM.

CURING AND PRESERVING BEEF AND PORK.

The season has come when it is customary for most farmers to slaughter their cattle and swine, and salt down beef and pork for the ensuing winter and summer use. These articles are to be the substantial "deposits" of the kitchen department, the nucleus of unnumbered meals, and are not only destined to sustain and strengthen, but to give tone and relish to vegetables and other food.

Holding this important place, it is not only of consequence to get good animals to start with, but when procured to preserve their flesh in the best manner to retain its juices and flavor.

Every year thousands of inexperienced persons are coming forward to conduct household affairs, and become responsible for the condition in which food for the family is to come upon the table. To many of these, the question, "How shall this beef or pork be preserved?" has never been propounded. They are aware that there may be a right and a wrong way of doing it, and that when well done there are few people who do not relish a slice of nice ham or corned beef; and that many a good housewife can speak of the various advantages, in the mysteries of cookery, which belong to the well-cured, clear, pickled pork. When we *know how*, it is an easy matter to have these things of good quality, yet it is too often the case that they are put up in so

careless a manner that they are either actually unwholesome, or in such condition that they can only be eaten by persons of the strongest appetites.

For salting *beef*, the following is recommended: The best pieces are the plates, ribs and brisket. Pack the pieces in casks, giving a very slight sprinkling of salt between each piece. Then cover the meat with a pickle, by boiling together, in 4 gallons of water, 8 lbs. of salt, 3 lbs. brown sugar, 3 ozs. saltpetre, 1 oz. pearlash, for 100 lbs. meat. Keep a heavy flat stone on the meat, that it may be well immersed in the pickle. It is said that beef packed in this way will keep a year, and will rather improve than grow worse.

Another mode recommended for beef is to take 4 qts. rock salt, pounded fine, 8 ozs. saltpetre and 5 lbs. of brown sugar, mix them well together, and with these ingredients pack the meat down very closely, so that they will of themselves cover the whole with brine. The next spring draw off the brine, boil and take off the scum till it becomes clean, adding a little salt to it, and apply it again, and the beef will keep very sweet and fine tasted during the whole summer following.

We should advise leaving out the saltpetre in all cases. It is a dangerous article to use. Those who pack large quantities of beef for market, state that saltpetre is used to fix or give a natural cherry red color to the lean of meats; too much imparts a fiery, dark red color to beef, detrimental to its sale, and injurious to its flavor. Sugar or molasses may be safely used, and they are thought by many persons to add to the flavor of the meat. Small quantities of saleratus are also frequently employed. The object in salting, however, seems to us to be, to preserve in the greatest degree the fine qualities and flavor of the beef or hams.

Salting Pork.—Perhaps as good a plan as can be found is to cut the pork into five or six pound pieces, take off all the lean, and then pack the pieces in a barrel, with a plenty of rock salt at bottom and between the layers. A brine as strong as salt will make it, boiled and skimmed, should then be poured *boiling hot* on to the pork—enough of the brine to cover the pork. It will require nearly a bushel of salt to a barrel of pork, besides what is used for making the brine. All this may not be dissolved, but is not wasted, as it remains good for future use. This plan is extensively practiced and we believe is universally successful.

Curing Hams.—A mode highly recommended is the following:—For every 100 pounds of meat, take 5 pints of molasses, or 5 lbs. brown sugar, 8 lbs. rock salt—add 3 gallons of water, and boil the ingredients over a gentle fire, skimming off the scum as it arises. Continue the boiling till all is dissolved. Pack the hams in a cask, with the shank ends down. When the pickle is cool, pour it over the hams; some persons use it boiling hot. They may lie in pickle from two to six weeks, according to their size, state of the weather and as the taste for saltness may be.

Beef or Mutton Hams, intended for smoking or drying, may be cured in this way, and be found excellent.

Much of the goodness, however, of either depends upon how they are smoked. They should not be heated, and should be hung shank end down, as this will prevent the escape of their juices by dripping. Some persons smoke hams two or three weeks,—as many days are sufficient for us; and not a few prefer the meat without any smoke at all.

The matter of preserving meat so as to preserve its fine flavor and qualities, is too little understood. A more careful examination of it would not only give us more nutritious and palatable food, but would save an immense aggregate loss.

Pork. — According to the New Albany, (Ind.,) *Ledger*, there will be a large hog crop the present season. There is an abundance of the best corn to feed them on. It believes that nearly 400,000 hogs will be slaughtered in the cities around the Falls during the packing season of 1866–67. The probable price will be between six-and-a-half and seven-and-a-half cents. The New England reader will remember, however, that these hogs are not like those usually slaughtered among us, which rarely weigh less than 300 pounds, and so along up to 600. The average weight of the Western hogs would probably be somewhere between 200 and 250 pounds, making the finest hams, and excellent pork when cured well.

—Abraham Logan, of Union Mills, Ind., writes to the New York Farmers' Club that he has lost two cattle this season by eating smutty corn.

JERSEY BLUE FOWLS.

The truth of the old adage that "every dog must have his day," is acknowledged by breeds of hens as well as by other subjects of capricious fashion. The "Blues," which originated in New Jersey, from a cross of some of the large foreign races with some of our native breeds, were once quite popular with the "fanciers," as well as with the more business-like breeders of fowls. But since the great and notable hen-fever, which introduced the Shanghaes and Cochin Chinas, the Jersey Blues seem to have been much neglected, and but little has been heard of them for many years.

Dr. Kerr, in his "Ornamental and Domestic Poultry," says:—"The color of this variety is light-blue, sometimes approaching to dun; the tail and wings rather shorter than those of the common fowl; its legs are of various colors, generally dark, sometimes lightly feathered. Of superior specimens, the cocks weigh from seven to nine pounds, and the hens from six to eight pounds."

DOWN EAST.—A correspondent of the *Maine Farmer* at Sarsfield, Aroostook County, says that Plantation was lotted out only six years ago, and now it is nearly all settled. The soil is of a reddish color, varying from one to two feet deep. The price of farms varies according to location and quality, from $300 to $600. Wild land belonging to proprietors, is worth from $1.50 to $2.00 per acre; State land 50 cents per acre, to be paid in building roads in the township, where the land is situated. Wages twenty-five dollars per month for farm labor, and from twenty to twenty-five dollars to work in the woods in the winter season. Mechanics' wages vary from $2.00 to $2.50 per day. The principal crops are oats, buckwheat and potatoes. Oats from 40 to 50 cents per bushel; buckwheat 45 to 50 cents; potatoes 30 to 50c. Average yield of oats and buckwheat forty bushels per acre.

DOING SPRING'S WORK IN THE FALL.—Work always crowds in the spring, and farmers intend to do all that is possible to be done in the fall to lighten and facilitate the labor of the more busy seasons. A late number of the *Eastern Mail* speaks of a method of preparing corn fields in the fall which is practiced in that part of Maine, and called the Daniel Bunker system. The land is ploughed and furrowed in the fall and the manure applied in the hill and covered; leaving nothing to be done in the spring but to drop the seed and cover it.

EXTRACTS AND REPLIES.

LEAD POISONING.

A correspondent sends the following caution from the *Middlesex Journal*, published in Woburn, Mass., with the request that we give it the wide publicity of the circulation of the NEW ENGLAND FARMER:

LOOK OUT FOR LEAD PAINT.—E. W. Hudson, Esq., of this town, recently lost two nice young heifers, by being poisoned from licking lead paint. The heifers had been running about the buildings where the painters had been at work, the owner not thinking of their licking the paint. As soon as they took the poison on their tongue, it was absorbed into the system, causing partial paralysis, and ending its work in convulsions and death. This case makes the third that I have seen this season. All three proved fatal. There is no known cure for this disease, and people should be very careful about having their cattle about where they can get at this deadly poison; for it is *certain death.—L. F. Gerald, Veterinary Surgeon, Woburn, Oct.* 22, 1866.

REMARKS.—Similar statements have been published within our recollection, but we are not able to refer to any now. We believe, however, the caution to "look out for lead paint," a very proper one indeed. The American Encyclopædia says that "the soluble salts of lead possess highly poisonous properties. The preparations of lead vary greatly in their intensity of action, though their effects as poisons are similar; the semi-vitrified oxide (litharge,) the carbonate (white lead,) and the diacetate (Gourland's extract,) are the most active." In his work on the horse, Mr. Youatt remarks that numerous instances are recorded of the fatal effects of the oxide and carbonate of this metal upon horses and cattle in the vicinity of lead-works and rifle-buts. When the poison is thus imbibed in small quantities, the symptoms generally extend over a considerable length of time, and consist in general derangement of the digestive system, such as loss of appetite, falling away in strength and condition, frequent attacks of cholic, with obstinate constipation of the bowels. The latter is not always present, but sometimes continued diarrhœa. The animal will also frequently suffer to a greater or less extent from paralysis. "The remedial agents for lead poison consist," says Mr. Youatt, "of active purgatives, sulphate of magnesia and croton oil being best; this should be followed by opium. If diarrhœa be present we may give the diluted sulphuric acid and opium, with an occasional dose of oil; the animal in the mean time, being kept on the most nutritious diet." But when so large a quantity is taken into the system as is done in case of lapping fresh paint with the tongue, it is probably, as Mr. Gerald says, certain death.

THANKSGIVING.

One day recently a good stout express-man came tugging up our office stairs with a headed-up barrel, which he set down with the remark, "there are more below." After bringing in another barrel and a full sack about as large as a barrel, he handed us a note, adding—"paid, all right." The note on being opened, read as follows:—

NORTH PEMBROKE, Mass., Oct. 29, 1866.

GENTS:—We have no mammoth vegetables to send you this year, therefore we send you some apples, potatoes and pumpkins; presuming you are all Yankees and like pumpkin pies.

Very respectfully, yours,
HORACE COLLAMORE.

Messrs. R. P. Eaton & Co., 34 *Merchants' Row, Boston.*

One of the barrels we found to be filled with assorted apples; the other, with assorted potatoes, and the sack with as handsome sugar pumpkins as we ever saw. Of course the apples and the potatoes were also of fine size and of the best varieties—none others are sent to the editors and proprietors of agricultural papers. If it is more blessed to give than to receive, Mr. Collamore should be entitled to the hearty congratulations of his friends, on this occasion. He certainly has our thanks for these tokens of his friendship and liberality.

BONE DUST.

How is it, Mr. Editor, when publishers of newspapers get a big job of advertising by the year, for a pecuniarily responsible company, that they are obligated not to admit anything, good or bad, in regard to the article advertised, from those who have been induced to invest their money for the article, by the advertisements? There have been advertising, puffs, &c. in regard to "bone dust," or "bone flour," in most or all the agricultural papers, for about a year—enough to cost, probably, something like fifty thousand dollars—in consequence of which much of the article has been sold to, and used by *farmers*. So much could not have been used the past season without producing, in those who paid so high a price for it, some opinion as to whether the like investment will pay another year, based upon their experience of the present year; but I have yet to see the first allusion to it, good or bad, by any one of your numerous correspondents, or in any agricultural paper; and I read three every week, and often several others.

The agent for its sale in this section, who did a good business at it last season, and no doubt would be glad to make twice as much the next, is anxious to see some testimonials in the FARMER from some of his customers, but doubting whether you would publish them, I will not send them at present.

Anything possessing the merits claimed for "bone flour" ought to be more generally known—should be accessible to every farmer—at a reasonable price, and if it is especially adapted to particular kinds of soil, that fact also should be clearly set forth. Why not devote one corner of the FARMER to farmers' experience with commercial fertilizers?

LECTUM.

REMARKS.—Every corner of the FARMER is, and always has been, open to the experience—good or bad—of farmers, "with commercial fertilizers," or any other article or system advertised or not advertised in its columns. And if we have not published "allusions" to the effects of flour of bone, it is because the statements have been withheld from us. And we are much surprised that our correspondent should express doubt as to our willingness to publish the testimonials alluded to, when we have so frequently invited the freest discussion on all agricultural subjects. Indeed, we have

feared that our exhortation, "farmers, write for your paper," would tire and offend the reader, from its too frequent repetition, though we have sought to give the invitation in the most attractive dress and in the least offensive form possible. The manufacturers have paid us liberally for all the space which their "advertisements, puffs, &c." have occupied, and now we will gladly publish, gratuitously, the statement of any farmer who has purchased and experimented with this fertilizer, whether the result has been favorable or unfavorable. The only condition we make is that the writer's real name shall accompany his communication, in this as in other cases. The manufacturer endorses his statements—the farmer should do as much. We invite "Lectum" to forward his testimonials, and hope that his strictures may prompt others to test the sincerity of our professions, by furnishing us with such facts as the labors and experiments of the year have developed.

WEATHER AND CROPS IN ORANGE COUNTY, VT.

After a drought of three weeks, we have just had a twenty-four hours' rain, measuring two inches on all the face of the earth, hereabouts. The previous dry time gave the farmers an excellent opportunity to finish up "fall work"—and do some extra jobs of shingling, making fences, &c., which has been well improved.

The early frosts prevented the corn from fully maturing, so that there is a much greater proportion of soft corn than usual, and seed corn will be scarce next spring. A great promise of potatoes, judging from the vines, turned out a decent yield, but inferior quality. A very good growth of pumpkins was badly injured by the untimely visits of Jack Frost, and "fall feed" being ditto, store stock generally does not look as well as it ought, and dairy stock, especially, do a "tale unfold" in regard to "choice butter." We have had rather an unusual crop of wheat and oats; barley, Indian-wheat and rye were good. R. N.

Randolph, Vt., Oct. 31, 1866.

A GREAT CROP OF RUTA BAGAS.

I have raised 775 bushels of ruta bagas from one-half acre of ground, this season. J. R. D.

Derby Line, Vt., Oct. 22, 1866.

REMARKS.—That's a rather small boo for so large a colt. Those of us who have been satisfied with one bushel to your three would like to know something about how you fed and lodged bagas at the rate of over 1500 bushels per acre.

FARM TOPICS.

I take a few minutes this evening, to write you a short letter on different subjects, commencing with

CORN.

I planted ninety rods to corn. I furrowed it out, and on a part of it I put hen droppings and dry ashes mixed together. I put a small handful in the hill. In some cases I put the corn first and the mixture on it; in other cases I put the corn on the mixture. In preparing the seed, I put a little tar into boiling water and turned the corn into the water, stirring it constantly while in. Then turned off the water and rolled the corn in plaster. For experiment, I planted a part without this preparation. The worms ate that badly which was tarred. On a portion of the field I put plaster in the hill, and although it did well, it did not equal that to which the hen-dropping mixture was applied. After the corn came up, and when it was hoed the first time, a little plaster was applied to the hill. It was hoed twice, but the weeds were large at harvest time. A part of my seed corn was carefully saved from stalks which produced two ears last year, but I could not see that the yield was any way superior.

On the ninety rods of land I harvested eighty bushels of ears of good corn, and ten of poorer; so that I have some to fatten my pigs with, without exchanging hard for soft corn with my neighbors.

MUCK ON POTATOES.

I tried muck on some potatoes, but did not see as it did any good; perhaps the season was too wet.

POULTRY.

From the first of December last, to October 1, I sold and used thirty dollars' worth of eggs, and raised fifty chickens from eighteen hens, though two of them died during the summer.

SQUASHES AND PUMPKINS.

I wish to remind the many readers of the FARMER that I told them last winter to keep their squashes and pumpkins where they will not freeze, but not to keep them in the cellar.

WRINKLES ON THE HORNS OF CATTLE.

I was asked the other day whether the wrinkles, or rings, on the horns of cattle, come from the head yearly, or, as the first one comes on, does the next one form above that, and so on? I think one comes above another, year after year. H. GRIFFIN.

Essex Junction, Vt., Oct. 23, 1866.

AGE OF BUCKS.

I will give you the result of my experience in breeding both from old and young bucks, in my flock of Cotswold sheep. Until last year, whenever it became necessary for me to change my bucks, I uniformly bought a lamb and used him for three years, when I changed again. But last year I bought a two-year-old buck, at large expense, which weighed two hundred and fifty pounds, live weight; the result is that my lambs are this year from ten to twenty pounds each heavier than usual.

I would therefore advise all breeders who expect to want a buck next year, to buy a first-class lamb this year and keep him well until needed.

My communication published in the FARMER of week before last, was incorrectly dated West Cornwall, Vt. T. L. HART.

West Cornwall, Ct., Oct. 29, 1866.

ANIMAL PHOSPHATE.

Having used Twell's Animal Phosphate the present season, I wish to state that on high ground, for all crops used, it answered every expectation; that is, the crops were very good and sound. On low ground, for potatoes, it did nearly as well as barn manure used in the same manner. On grass, owing probably, to the weather being so dry in the spring, I could perceive no benefit from the application of it. The corn was as good, I think, as I ever raised on the same kind of ground. It was planted about May 5th, and came up well; though perhaps not very quick, as rain was needed to start it. Crows pulled up some before the lines were put up. Hoed the first time about the middle of June and again the last of the month.

This piece of corn was let out on shares, which was to me a very unsatisfactory operation; as much so as anything in the farming line that I have ever done. Mr. Editor, does the man that takes land and has the best part of the crop, (of course he

does not take the meanest share when he divides it himself,) and has his team found him, expect to do all the necessary work and in good season, or only a certain part? Is there any rule about this, or is it left with the parties to agree? How is it where nothing is said about every particular part of the work? JOSEPH W. BROWN.

Kensington, N. H., Nov. 1, 1866.

REMARKS.—There is comparatively so little land cultivated on shares, or on lease, in this country, that the relations of landlord and tenant are not well defined, either in practice or law. In England, where a large part of the land is rented, the business of leasing has been reduced to a system. There they have printed forms which descend to particulars with almost ludicrous minuteness; many of them, says Mr. Stevens in his Farmer's Guide, include conditions relative to the payment of "kain fowls," and personal service, such as driving coals for the landlord's use—remnants of the spirit and practice of feudalism. Reservations in relation to the hunting and shooting privileges of the landlord and his friends are constant sources of dispute and litigation. But after all the perfection of covenants and conditions, each party finds its greatest security in the character of the contracting parties.

In relation to the specific inquiries of our correspondent, we would say that we suppose the common practice of the neighborhood should be taken as the governing principle. If these questions were put to a judge or jury, the inquiry would not be what is the rule in England, or in Massachusetts, but how are the farmers of Kensington, New Hampshire, and of its vicinity, in the habit of managing these things? As we cannot anticipate what the testimony would show on this point, we cannot answer his questions satisfactorily. We do not suppose, however, the one who takes a field on shares would be justified in omitting to do any part of the work which is usually done by those who cultivate on shares, on the plea that there was nothing said about that particular work in the agreement.

A BADLY CORKED OX.

I have a pair of nice workers, one of which, last winter got corked on one claw. It was cut very badly, and now is grown down so that he is lame. I wish to learn through you, or from some of your correspondents, what to put on to the hoof in order to grow it off as soon as possible, and how to have him shod; and whether a whole shoe in the shape of a horse shoe would work or not.

Littleton, N. H., Nov. 4, 1866. A SUBSCRIBER.

REMARKS.—One great inducement to the use of oxen instead of horses, is the fact that oxen when lamed or injured may generally be disposed of for beef by feeding them awhile, when not kept in beef order all the time. And this consideration is a strong argument in favor of keeping working oxen constantly in the best possible condition. The horse, however highly fed he may be, is valueless in case of injury which unfits him for further labor. But our correspondent wishes to cure his ox, and we wish we could give him the desired information. We hope some one who understands the nature and operation of medicines better than we do, and who has had better success in "doctoring" than we have had, will respond to the request of our Littleton "subscriber." Our own experience and observation has forced upon us the conviction that most people have too much confidence in medicine. One of the best physicians we ever knew, and one who shared largely the confidence of the community in which he lived, once remarked that, when visiting his patients, and realizing how much more they and their friends expected of him than he was able to perform, he often felt like throwing away his saddle bags and deserting the neighborhood and his profession forever. Medical science is far less potent for the cure of disease than is generally believed. Nature does the work, while the doctor gets the credit. Our correspondent's ox may get well—his wounded foot may heal, but we doubt whether anything put "on to the hoof" will ever "grow it off." By the spontaneous operation of nature, the old hoof will be gradually crowded off, as the new forms, an operation we may facilitate by proper care and management, and by soothing and cleansing applications. Perhaps also it may be necessary that the ox should rest, and possibly the whole shoe might prove beneficial,—the idea strikes us favorably,—but we have had no personal experience with it.

WITCH GRASS.

Last spring I had about two acres of rich intervale land that was so filled with witch grass that I considered it almost worthless for tillage purposes, but not for grass, for it makes the best of hay, and a pile of it if you will feed it. But being determined to eradicate it if possible, I let it lie till the first week in June, when the grass was up, say six inches or more. I then planted it deep and sowed two bushels India wheat. The growth was very large, and I threshed 80 bushels of good wheat. To all appearances, I have made a perfect cure of the witch grass. But if this does not prove a perfect killer, I will sow as early I can and clear frosts, and at proper time plow in, sow again, and in October plow in again, and by so doing I will give my land a big manuring, and will warrant a sure cure of witch grass. In so doing, I should recommend five pecks per acre to plow in.

If the farmers in the Connecticut Valley will try this thoroughly, they will find it worth more to them than the FARMER will cost them for twenty-five years. A. H. WILCOX.

St. Johnsbury, Vt., Oct. 29, 1866.

A COW OVER-FED ON CORN.

Four weeks ago I had a valuable cow eat all the corn she wished. Contrary to expectation she did not bloat, yet I physicked her well, and in a day or two she began to eat and has had a good appetite, ever since, and appears bright and healthy, only that she cannot raise herself from the ground. She can use her fore legs, but has not sufficient strength in her back or hind legs, I don't know which, to get up. I fixed a tackling and got her up each day, for a while; she could only bear her weight for a minute or so on her hind feet, then depended entirely on the rigging for support. I could not see that she gained much, and thinking perhaps if the

trouble was in her back, this course would do her no good, I have discontinued it. Can you, or any of the readers of the FARMER, tell where the trouble is, and what course to pursue with her?

West Hartford, Vt., Nov. 5, 1866. H.

REMARKS.—Not being well satisfied what course to recommend in this case, we have consulted several men of large experience in the management of cows. Like ourselves, most of them are undecided as to the character of the disease, and even to its location. Some spoke of it as "founder;" others thought it was the result of "inflammation." But whether caused by the over-dose of corn or by the physic administered, was another question on which our advisers were in doubt, as we are not informed what medicine was used. Among the causes of inflammation of the kidneys, mentioned by Dr. Dadd, are "cold, external injury, or injury from irritating substances often sent full tilt through the kidneys—as spirits of turpentine, gin and molasses, saltpetre, saleratus," &c. In speaking of founder in horses, Dr. Gunther, in his Homœopathic Veterinary Manual, remarks that founder "frequently supervenes on hard riding or driving; and more especially if the horse has had a purgative administered, from which cause I recollect three well marked cases." He also mentions "heating, and indigestible food" as a cause of founder. In case of founder from excess of food, Dr. G. recommends, "If signs of inflammation are observed, a dose of *aconitum* immediately, and after some hours, *arsenicum* is to be employed. *Arnica* may be administered in case of rigidity of the limbs and inflammation of the feet; *bryonia*, in doses frequently repeated in hydarthrus; *nux vomica*, when there is paralysis, abdomen tucked up, and an aversion to food." So much for founder and homœopathic treatment.

For inflammation of the kidneys, Dr. Dadd says: "Relax the muscular structure by the application of a blanket or horse-cloth wrung out in hot water. Injections of a mild, soothing character—slippery elm, or flax-seed-tea—should be used, but not purgatives. The application of a poultice of ground hemlock—as near the parts affected as possible, will generally be found useful; the object being to invite the blood to the surface and extremities."

The cow did not bloat probably because the corn was in an undried condition, and we are inclined to the opinion that the cow would have recovered had she been properly exercised, instead of taking the medicine.

WATCHING FOR THE METEORS.

After dreaming of clouds of shooting stars and brilliant meteors, I have risen in the small hours of the morning to find that this my last, like some other dreams of a life of more than forty years, has not been realized. The night is clear and quite light for a moonless one, but the stars seem content this year at least, on the thirteenth of November, to follow their accustomed orbits quietly, I know that this is always so, though appearances, which are often deceitful, might sometimes lead one to think they were suddenly leaving for parts unknown. Our Heavenly Father holds and guides them all by His almighty power,, so that there is no jarring or discord. Would He do less for us, if we would submit to His control?

Six months have come and gone since my last communication for the FARMER. The different varieties of seed have been sowed or planted, have germinated, sprung up and borne, some thirty, some sixty, and some a hundred fold. While we farmers have been cultivating the earth thus carefully and successfully, have any of us neglected the good seed of the word and teachings of our Heavenly Father, which has been sown in our hearts from time to time? Now that our harvests are gathered in, let us inquire whether we are prepared for a harvest of eternal blessedness.

W. I. SIMONDS.

Roxbury, Vt., Nov. 13, 1866.

REMARKS.—Now that we are soon to be able to offer our friends better accommodations than heretofore, may we not hope that your calls will be much more frequent than once in six months?

POWER CIDER MILL.

Can you inform me who has a power mill in your State for grinding and pressing apples for cider, driven by water or steam? I have been told that two or three were owned in Essex Co. I would like to know how they work, and the price of them, and whether they make as good cider as the old wooden mill. I supposed that the cider coming in contact with the iron mill would discolor and give it an odd taste. J. O.

Portland, Me., Nov. 12, 1866.

REMARKS.—Messrs. Whittemore & Belcher, 34 Merchants' Row, Boston, have "Emery's Portable Hand or Power Cider Mill," complete, with triple screw press—capacity 6 to 10 barrels of cider per day, $65. It is said that, practically, there is no injurious effect from the iron, as the pomace or juice does not remain long enough in contact with the metal to be perceptibly injured. We have no knowledge of either steam or water power having been used in cider-making, either in Essex County, or elsewhere; although either might readily be applied to this and perhaps to other mills.

BARN BUILDING.

In a recent number of the FARMER a correspondent recommends *tight barns* for keeping hay, on the same principle as fruit is preserved by "canning." An acquaintance of mine in an adjoining town put in his hay, or stored it, on that principle, not long ago, excluding the air as much as possible. The hay kept first rate till it was almost rotten, when he gave up his theory, called in neighboring help and *uncanned* it as rapidly as possible. But possibly he did not cure it enough, or *can* it right. I hope to see more upon the question whether tight or open barns are best for keeping hay; and is it a fact that hay requires to be better cured for stacking than for housing? QUERIST.

WRINKLES ON HORNS, AND GRAINS IN WOOD.

From an observation of more than forty years, I find that wrinkles commence at the head of the animal and work up towards the end of the horn. Each year a new one begins at the head, caused by checking the growth. If an animal was kept at an equal stage of growing the year round, there would not be any wrinkles in its horns. It is usually

said that the first wrinkle commences at the third year. I have a pair of steers, two years old last spring, that have one wrinkle now.

In my opinion the grains of wood are the result of a similar cause. If forest trees grew the year round, there would be no grains in the wood. I have cut off the stock of an oleander tree, seven years of age, which was kept in the house and growing the year round, and found the wood to be firm and without any visible grain.

JOHN M. ROWELL.

Tunbridge, Vt., Nov. 12, 1866.

BUTTER FROM COWS KEPT ON THE "SOILING" PLAN.

MR. R. P. EATON:—You said you would like to see a sample of my fall butter. This is late fall, but I could not get round any earlier. You know I engage custom differently from most others. I agree to supply whatever amount they engage, without fail, regardless of short crops or bad weather. And it is on that account, in part, that I am enabled to obtain the price I do: 60 cents, since last May. I could not make this arrangement if I did not depend almost wholly on soiling, and had not learned to make butter *every* time from a pail of cream.

Wherever the milk or cream has been kept, the cream is made to indicate the right temperature by the thermometer before I commence churning. The temperature varies according to the temperature of the room in which I am at work, and a little regard is had to the sourness of the cream—as sour cream comes quicker than sweet, and may be churned a little cooler. But 63 degrees is very near the medium.

Our hay this year is largely rowen. You remember that handful of grass I sent you last July, grown from seed sown April 15th? We have mowed that lot twice since then, cutting three very good crops in one year, and all within six months of seeding. The timothy produced much the best *first* crop, the orchard grass the best three crops, all being quite uniform. The Northern clover did not produce as much as either of the others.

A. W. CHEEVER.

Sheldonville, Mass., Nov. 15, 1866.

NOTE.—The beautiful balls of butter, neatly stamped and compactly packed, sweet and fragrant, sufficiently explain to our mind the reason why our friend Cheever's customers buy all he can make at a rate above the regular market price. The secret of his success he has made clear in the above Extract, and in the communication which we publish in another column. We hope he will devote a part of his leisure hours during the approaching winter evenings, in transcribing for us the records of other successful farming operations—particularly as regards the dairy.

CAUSES OF SICKNESS—SUGGESTIONS OF AGE.

I have taken the FARMER about ten years, much to my satisfaction, and have most of them now on hand. I have been an interested observer of the improvements in agriculture, manufactures, and modes of living in twelve of the States of the Union, and in Canada, and have tried many experiments myself, some of which were successful, some far otherwise. And now, in my eighty-third year, as I look back and think of those who started in life with me, it is sad to reflect how many have fallen by the ravages of war, by pestilence, imprisonment, intemperance, and by living too fast and exercising too little.

But it appears to me that there is one great cause of sickness and death that people are not sufficiently aware of, viz: bad or impure water. Of the bad effects of impure water, I may be permitted to give an illustration from my own experience. Many years ago, when in Montreal a few days on business, I was taken very sick. A friend told me it was the water from the River St. Lawrence that made me sick, as it did all Yankees. My symptoms were very severe, and similar to those of the cholera. I walked out in the open air, took no food, drink or medicine from the evening until about six o'clock in the afternoon of the next day, and then not one-fourth of a meal. The next morning I was fit for business. I went to another hotel which was supplied with water from the main land. Another boarder at the first hotel was taken sick as I was, but he stayed, ate, drank, doctored, and died. The cholera soon after appeared there and swept off many of the inhabitants, of all classes.

Many healthy people go from these parts to places at the South and West, and die of what is called dysentery; others come back and say the water is so limy they can't drink it. The trouble may be from lime; it may be from something worse. Rain water when it first falls is good, but stagnant water soon becomes unwholesome.

There is an excellent piece in the FARMER of May 3, 1862, which I wish was published throughout the whole country, on charcoal as a purifier of water. In hilly countries good water may be obtained by digging wells on high ground from which it may be conveyed to the barn, garden, or house.

Pestilence may arise from different causes. Its seeds may float on the water or in the air, but is most prevalent in low places by rivers and marshes.

In my opinion the use of blood is another cause of sickness. The cholera and plague always come from the places where they save it for food. If fresh, it enters the system, in man or beast, without digestion and becomes a part of the same. Hogs that have the distemper come from slaughter houses, and are worthless to fat, if not distempered.

Among the conclusions which the observation and experience of a long life have forced upon me, are the following: That typhus fevers, measles, &c., mostly prevail in hog-harvest time; that beef, though a wholesome food when cooked, often causes the dysentery, when eaten raw; that great sickness and death often prevails near low, stagnant rivers, while health and long life are enjoyed on high ground near by; that the people who live the longest are those who live a busy life, and whose food is plain; that the cause of murrain in cattle is an insect taken into the system alive.

What will be the condition of this country if it advances for the next seventy-five years as it has during the past seventy-five years over which my memory extends? Are the usual effects of wealth, idleness and luxury to be witnessed, or will Jesus Christ take to Himself and rule and reign, whose right it is? PHINEAS PRATT.

Deep River, Conn., 1866.

A MUCK BED.

I have a muck bed in the middle of my farm, containing perhaps, one-eighth of an acre. A few years ago it was covered with large oak trees, with no underbrush at all. It was covered with water perhaps one-quarter of the year. The trees have been cut, the land drained, or partially so, (it can be completely,) and it is now fine feeding ground. Now, will you and the readers of the FARMER tell me whether it would be the most profitable for me to let it remain in pasture, of which I have no more than I need, or dig it out to enrich my improved land?

I have a field of two and a half acres, too wet to plough, except in a dry season, which bears a fine

burden of timothy. Last winter the grass was winter-killed in spots. On these spots I intend to sow redtop and timothy in the spring. I also intend to sow bone. When is the best time to sow the bone, now or in the early spring? I should have sown it before, but could not get it where I *know* it is *pure*. Would it be better to mix ashes with it, say two parts bone and one part ashes?

Is there any way in which I can underdrain it? The upper end of the field is only two feet higher than a ditch at the other end, a distance of twenty-one rods.

I have many other questions I would like to ask, but would not give too many at a time.

EXPERIOR.

My Farm in Old Connecticut, Nov. 15, 1866.

REMARKS.—Your *one-eighth* of an acre may be worth to you for one season, two or three dollars as pasture land. Every cord of muck you haul out—if it is of good quality—is worth $2, deposited on the field where you are to use it. The muck may be ten or even twenty feet deep. If so, you can figure yourself into a large property in a hurry! At any rate, do not hesitate to haul out—use the muck!

Sow the bone at the time you put on the grass seed. Sow the ashes by itself, this fall or winter.

You can partially drain the piece spoken of by the use of stones. The ditches may be made as deep as you please, leaving a clear outlet for what fall there is.

MATERIAL FOR WATER PIPE.

I am especially desirous of learning what is regarded at the present time, the most serviceable and enduring pipe to be used as a substitute for lead, in conducting water from wells, springs, &c.; also, where obtainable, and price, if known to you. My thought is, you published this knowledge awhile since in your valuable journal, but I find myself unable to refer to it. When your greatly coveted "MONTHLY" issue shall again appear, this difficulty, I well know from a long past experience, will be obviated.

AN OLD FRIEND AND SUBSCRIBER.

Pepperell, Mass., Nov. 15, 1866.

HOW TO FATTEN AND WHEN TO KILL HOGS.

Will some one of the readers or Editors of the NEW ENGLAND FARMER please inform me if it makes any difference what hogs are fed on the last four weeks before they are killed? If it does, please say what is best. Does it make any difference when it is killed? If it does, when is the best time, especially with reference to its shrinking when cooked. I find some pork will shrink nearly one-half, whilst some others will swell a little. The difference must be in the feeding, killing, or breed of hogs. I prefer that pork should gain in cooking rather than lose. YOUNG FARMER.

Roxbury, Vt., Nov. 16, 1866.

EARLY TOMATOES.

Last year, my father covered his asparagus bed thickly with horse manure and some frozen tomato vines which had by some accident grown there. Last spring the coarse parts that remained were raked off, when numberless tomato plants came up, strong and vigorous. Some of them were transplanted; a few were left, which ripened fruit a week or two earlier than any in the neighborhood started under glass, or in boxes in the house. The transplanted plants grew rapidly, and bore abundantly. Might not a useful hint be taken from this chance experiment? MARY.

Parsonsfield, Me., Nov. 10, 1866.

SALTING MUTTON.

A subscriber in Maine, who lost a lot of mutton that he put into the same pickle which preserved beef perfectly good, wishes to know the cause of his failure, and how to succeed next time. If the meat was perfectly good, the pickle new, and the tub sweet—important "ifs"—we cannot divine the cause of his failure. We generally use rather less salt for mutton than for beef. On the other hand, if the meat was a little tainted, if the same pickle had been used for beef or pork, or if the barrel was foul, we need not search further for the cause of failure.

TEMPERATURE OF WATER FOR SCALDING HOGS.

I have learned by many experiments that 165 degrees is about the right temperature of water for scalding hogs. Many "bad scalds" may be avoided by observing this rule. A. W. C.

Sheldonville, Mass., Nov. 15, 1866.

HOP CULTURE.

A correspondent of the New York *World* says that England is now paying from £10 to £12 per cwt.—equal to 70 to 80c per pound in our currency. Such extravagant prices will be likely to stir the Yankee blood to a fever heat. True, hops are subject to diseases, and so are our other crops. Like our grains and fruits they have enemies that prey upon them, and we should learn to contend with these difficulties. The English hop planter destroys the hop louse by an application of strong tobacco water. We can do the same. He cures the mould with flour of sulphur. We have not yet been troubled with that disease, and there are many others which have not afflicted us.

The following remarks on the cultivation of this crop are by the *Rural American*:—

"The ground intended for the hop yard should be well manured, then ploughed in April, dragged and marked four feet each way: then with a hoe on every other mark each way dig a hole about three inches deep, into which drop a hop root from three to six inches long; then cover with dirt to make it level. The root, if it does well, will throw up a sprout from each joint. Every other hill on the hop row, and next row entire, can be planted to corn or beans, as the hops do not require to be poled the first summer. Every fall each hill of hops must have two or three shovels full of manure put on it, to enrich the ground, and protect the roots from freezing. The following spring the manure must be pitched off from the hills, and the runners, if any, dug out and cut off, to prevent them from spreading all over the ground, and to preserve the hills in their places. There are but few runners the first spring, but a plenty afterwards. After the runners are removed, the poles can be set, two to each hill, about one foot apart at the bottom,

with the tops spread far enough apart to prevent the vines from running from one pole to the other, and to make the tops of the poles in the yard an equal distance from each other.

The next thing is to plough, commencing in the centre between the rows, and turning the furrows from the hill until you get near enough to each row, then turn and plough the furrow the other way; after that reverse the furrow, turning toward the hill; the rest can be done with the cultivator or hoe, keeping the ground clean and mellow. Put the vines around the poles from right to left, and tie with the yarn ravelled from an old stocking. This is full of kinks and will stretch and not damage the vine as it grows. The hops are generally ready to pick the last of August or first of September. From ten to fifteen hundred pounds is the yield per acre."

PROVOST MARSHAL GENERAL'S REPORT.

The report of this officer which has just appeared, is full of interesting statistics. The total enrollment under the Act of March 3 (the year is not given), was, in the loyal States, 2,264,063 men, not including 1,000,516 then under arms. Under the Bureau 1,120,621 men were raised at a cost of $9.84 per man. Before the Bureau was organized, 1,356,593 cost $34.01 per man. The deserters arrested and returned to the army numbered 76,526. As to desertion the report says:

It appears, beyond dispute, that the crime of desertion is especially characteristic of troops from large cities, and of the districts which they supply with recruits. The ratio per thousand of desertion to credits throughout the loyal States is 62.51. In the State of New York it rises to 89.06, and in the small States near New York City it is still higher. In New Jersey it is 107; in Connecticut, 117.23; in New Hampshire 112.22. Yet the general ratio of New England is but 74.24; the ratio of Massachusetts being 66.68, that of Vermont 51.75, and that of Maine 4.390. In the West, where large cities are rare, the average ratio sinks to 45.51.

It is probable that a more minute examination of the statistics of the army than has yet been made, would reveal the fact that desertion is a crime of foreign, rather than native birth, and that but a small proportion of the men who forsook their colors were Americans. It is a notorious circumstance that the great mass of the professional bounty-jumpers were Europeans. In general, the manufacturing States, as, for instance, Massachusetts, Connecticut, Rhode Island, New York, and New Jersey, rank high in the column of desertion; and this result is to be attributed not only to the fact that such States are dotted with towns and cities, but to the secondary fact that these towns and cities are crowded with foreigners. The respectable and industrious part of this population did, indeed, produce a mass of faithful troops; but with these were mixed a vast number of adventurers, unworthy of any country, who had no affection for the Republic, and who enlisted for money.

It is singular, and at first sight, a puzzling fact, that two extreme Western States, Kansas and California, are distinguished, respectively, by the high ratios in desertions of 117.54 and 101.86. But it must be remembered that more than half the male population of Kansas entered the service, and that, consequently, its contingent contained an unusually large percentage of men whose presence was necessary to the subsistence and protection of their families. In further explanation of this fact, something may be attributed to a lax state of discipline natural in border regiments, serving for the most part in a somewhat irregular defence of their own frontiers. As for California, it is to be observed that a portion of the contingent of that State consisted of men levied in the large cities of the East, or of adventurers from all quarters of the globe collected in the cosmopolitan thoroughfares of San Francisco.

The most fruitful source of casualties in the regular army is desertion; it reaches the high ratio of 244.25 per thousand, while in the volunteers it is but 62.51. The inference is irresistible that the men who enlisted in the regular service were far inferior in character to the troops furnished by the States; and it will probably be found, on examination, that they were more commonly levied in the large cities, and embraced a far larger proportion of foreigners. The regular service did not secure that noble class of native-born soldiers which local pride and State patriotism poured into the volunteer organizations.

The casualties of the entire military force of the nation during the war of the rebellion, as shown by the official muster rolls and monthly returns have been compiled, showing, among other items, 5221 commissioned officers, and 90,868 enlisted men killed in action, or died of wounds while in service; 2321 commissioned officers, and 182,329 enlisted men who died from disease or accident; making an aggregate of 280,739 officers and men of the army who lost their lives in service.

From carefully prepared tables, it appears the proportion per thousand which each loyal State, or group of States, furnished to the mortality list was as follows: Maine, 44.37; New Hampshire, 44.27; Vermont, 58.22; Massachusetts, 47.76; Rhode Island, 22.34; Connecticut, 35.48; New York, 35.68; New Jersey, 25,21; Pennsylvania, 31.75; Delaware, 25.63; Maryland, 17.04; District of Columbia, 3.62; Ohio, 36,55; Indiana, 30.01; Illinois, 34.80; Michigan, 44.82; Wisconsin, 42.01; Minnesota, 25.33; Iowa, 45.44; Kansas, 61.01; California, 12.34; West Virginia, 37.90; Kentucky, 25.10; Missouri, 21.74.

The general average for the groups of States was as follows: New England States, 44.76;

Middle States, 31.79; Loyal States (general ratio) 35.10; Border States, 25.32; Western States, 36.81. The report says:

"As an explanation of the superior battle mortality of the extreme Northern section of the country, I suggest the fact that this region being far removed from the seat of war, it was not necessary for any portion of the troops raised in it to remain at home on garrison duty, and they were therefore kept almost constantly at the front. Hence, also, at least in part, the high rate of this section under other heads of casualty resulting in an especial manner from field service, such as deaths by disease and discharges for disability.

A remarkable exception of the rule above noticed is Kansas, which was a frontier State during nearly the whole contest, and which, nevertheless, shows the highest battle mortality of the table. But the population of Kansas is a peculiarly pugnacious one, rendered such by its origin and history. The same singularly martial disposition which induced above half the able-bodied men of the State to enter the army without bounty, may be supposed to have increased their exposure to the casualties of battle after they were in the service.

Among the colored troops the deaths by disease were largely disproportioned to those by the casualty of war. The report says:

"The ratio is no less than 141.39 per thousand, while the highest ratio on the volunteer list is 124.02 (Iowa) and the general volunteer ratio is 59.22. This disparity is the more remarkable because the colored troops were not so severely exposed during the war to the hardships of field service proper, as is evident from the fact that their battle mortality is but 16.11 per thousand, while that of the volunteer is 35.10. The ratio of deaths by disease among the colored troops compares still more unfavorably with that of the regulars, which is but 42.27 per thousand. It seems to indicate that the negro, in the condition in which the war found him, was less able than the white to endure the exposure and annoyances of military service. It may be assumed that where one man dies of disease, at least five others are seriously sick, so that a large proportion of the colored troops must have been constantly upon the sick list."

KEEPING FOWLS.—Mr. Albert C. Vose, near Manville, pursues what seems to us a reasonable and profitable course in keeping fowls. He has enclosed an acre and a quarter of land with a high fence; and in this enclosure he keeps about a hundred and fifty hens. He informs us that during nine months of the year these fowls gave a net profit of two dollars per day, or say five hundred dollars per year. Is not this keeping fowls to some purpose? In Mr. Vose's enclosure is a running stream and fruit trees. The trees afford shade, while their fruit-bearing is improved by the fowls.—*Woonsocket Patriot.*

AGRICULTURAL ITEMS.

—There are about 25,000 bees in a swarm.

—Gail Hamilton says, we do not know how to work until we know how to play.

—It is said there is a corn field of 160 acres in extent within the city limits of Des Moines, Iowa.

—Good fences always pay better than lawsuits with neighbors.

—In Denmark, one cannot cut down his own trees without a permit from Government.

—Where do house flies come from? Who can tell when, where, and how they are propagated?

—Mr. Andrew McLaughlin, of Peacham, Vt., raised 58 bushels of wheat on 1½ acres of land.

—Potato starch factories in Maine have paid 30 cents per bushel for potatoes this fall.

—A writer in the *Country Gentleman* says it costs him $1.75 each, a year to keep hens.

—Mr. A. Noyes, of Mears, Mich., claims to have a potato which weighs six pounds.

—The *Maine Farmer* says the hay crop of that State this year was about two-thirds its usual average.

—W. W. Chenery, of Belmont, Mass., recently harvested 1022 bushels of carrots from one acre and five rods of ground.

—Drained land is generally ten to twenty degrees warmer in summer, than that in which water stands stagnant.

—H. Hopkins, Jr., Montgomery, Vt., has a March Durham calf that weighed 750 lbs. on the first of October.

—In England and Scotland land is owned by the large landlords. This leaves the entire capital of the farmer free for active employment.

—A "steam shovel" has been put in operation in raising the Squankum Marl, so highly prized in New Jersey for its manurial value.

—A late well-informed writer says $300,000,000 a year, will not cover the damage done to farmers in this country by insects.

—About 1,500 acres of flax were grown this summer in Kankakee Co., Ill. The average price received for the crop per acre was over $30.

—"Josh, I say, I was going down street t'other day, and I seed a tree bark." "Golly, Sam, I seed it hollow." "I seed the same one leave." "Did it take its trunk with it? "Oh, it left that for board."

—Mr. Bright, in one of his late speeches, said that one-half of Scotland is owned by twelve persons, and one-half of England by one hundred and fifty.

—On the great grain growing region of the Campagna, near Rome, where the extensive plains afford the finest field in the world for the use of the reaping machine, the old sickle is still used, and the ox "that treadeth out the corn" is the only

threshing machine known or believed in. The grain is cultivated and harvested just as it was 5000 years ago.

—A letter from Buenos Ayres says the wool clip in that country will probably exceed that of last year. It is estimated that it will be worth twelve million of silver dollars.

—The prize of $100 offered by Mr. Greeley for the best grape for general cultivation has been awarded to the Concord, as raised by William H. Goldsmith, of Newark, N. J.

—Quince cuttings are generally successful when set in the fall. They are not so sure in the spring. Put them in the ground as soon as possible and protect them by a covering of barnyard manure.

—The average yield of wheat per acre in Michigan is believed not to exceed ten bushels per acre by a Marshall county correspondent of the *Western Rural*.

—Mr. Meehan, editor of the *Gardener's Monthly*, says that he has discovered long ago that the roots of trees die in proportion to the severity with which the tops are pruned.

—In some of the large dairies of Devonshire, each milker has three buckets, and divides each cow's milk into three portions, which, with their cream, are kept entirely separate.

—To keep warm feet, line your boot with calf-skin dressed soft with the hair on, or with young lamb skin. Every man should have two pairs in use, and change every day.

—J. A. Pollard, Esq., Superintendent of Vermont State prison, at Windsor, raised large vegetables this year. A marrowfat squash 73½ lbs.; a cabbage 23½; a turnip beet 9½; a blood beet 6¾ lbs.

—A hole in a tin pan or dish may be mended by cleaning around its edges, sprinkling on a little rosin, putting on a lump of solder and heating the other side with a lamp, or otherwise, until the solder melts.

—The people of Southbridge, Mass., are rejoicing exuberantly over their new railroad; but the Boston *Journal* says the farmers' wives who live near the track "think the engine whistle sours milk worse than thunder."

—A correspondent of the *Country Gentleman* thinks it will be found that ewes will yield more mutton from a ton of hay or grain than will any male sheep. It has been shown that they yield more wool in proportion to weight.

—A man, a short distance from the city, says no one need tell him that advertising won't cause a big rush, for he advertised ten bushels of grapes for sale, and the next morning there wasn't one left—the boys stole 'em all.

—A good substitute for buffalo robes, which are now very costly, may be made from the skin of a bullock, which is naturally soft and woolly, or of sheep skins tanned with salt and alum and rubbed until pliable.

—The Editor of the *Turf, Field and Farm* regrets that "the turf is on a decline in Louisville, Ky. The people take no interest in racing, and it is thought that the beautiful Woodland course will have to be abandoned to the plow."

—T. C. Peters, of Maryland, says that the average yield of wool from an ordinary flock of sheep will be about one pound to twenty pounds of carcass, live weight, and that if more is obtained, it must be paid for in better care and keeping.

—A large number of horses have been sold in Maine within a few weeks at prices varying from $500 to $3350. These prices ought to secure excellent horses, and they certainly encourage persons to raise blood horses of good quality.

—What is worth doing is worth doing well. Do not keep stock, if you cannot keep them properly.

> "Let the flock's good feed
> Be the master's heed;
> What at first he may east
> Will be doubled at last."

—In Brittany, the milk of the previous evening is mixed with the morning's milk, and after standing a few hours, the whole is churned, and is said to produce a large amount of butter, of a better quality, and will keep longer, than that treated in the usual manner.

—For the relief, but not complete cure, of the heaves, a correspondent of the *Rural American* recommends the outside of shell bark, burnt to ashes and mixed with the horse's feed, as much as he can be made to eat, and allow him to eat no dusty hay, especially clover hay.

—It has generally been supposed that there would be great difficulty in rearing chickens hatched in February and March, on account of the cold, but, with proper accommodations or conveniences, Mr. Bement says he has found it more certain than those hatched in June.

—By warmth and judicious feeding, says Mr. Bement, a hen may be made to lay as many eggs in two years as she would under ordinary circumstances in three; and every one knows, or ought to know, that a fowl fatted at two years old, is much more tender and palatable, than one that is older.

—To sort potatoes or apples, stand upright and save the backache. It is more healthy. Make a platform 3x3 feet, with sides 4 or 6 inches high. Leave a gap at one corner, to pour out from. Set the form on a barrel, or other support, and pour a bushel at a time of apples on it, and sort them standing. It is easier to lift up than stoop down.

—A Northern cotton planter in Florida, says the *Tribune*, had a dairy of three cows this summer, and they made a pound of butter a week, besides having some cream for coffee. This is what it is to live in a country without grass. A Maine farmer speaks of having one cow from which two pounds

of butter were made every day through the summer. This is what it is to live in a country where there is grass.

—After admitting the superiority of the coarse wooled sheep for mutton, generally, and especially for rearing early lambs for which butchers pay large prices, a correspondent of the *Prairie Farmer* claims that "one hundred bushels of corn fed to good *full aged* merinos will produce as much value in meat as in any other breed." Four years is regarded by him as the earliest age at which merino sheep are fit for the feed yards.

—Mr. W. C. Schofield of Coventry, Vt., has two Leicester ewes which for the past three years have each brought him two lambs each year. He sold the lambs for sixty dollars, and the wool for twenty. His four lambs this year weighed 59, 60, 57, and 50 pounds. He has also eight cows from which he has made, since the first of April, 1200 pounds of butter, and reared four calves. The butter brought him $490.22. So says the *Vermont Farmer*.

—When on a tramp last summer, says S. P. Mayberry, in the *Maine Farmer*, there was pointed out to me a farmer who seemed to get his work along without much fuss and had more leisure time than his neighbors, and still produced as large crops. In conversation with him I found his mode of cultivation was to have no old ground, consequently no weeds to contend with. He planted his corn and potatoes on broken up ground manured in the hill, and in the fall spread on manure and plowed it under some three inches, then sowed it down to grass.

—After recording the death of a man in Dixfield, who was killed by being struck by the hook of a chain of a stump pulling machine, which gave way, the editor of the *Maine Farmer* adds: "We came very near losing our own life last summer by the giving way of a bolt while using the horse pitch fork. The bolt was fastened into the floor, to which a pully was attached, under which a rope run. As this was put to the highest tension, the bolt flew out, passing near our head with great velocity." Mowing, threshing and other machines, hay-presses, stump-pullers, horse forks, &c., should be operated with the greatest care.

—A correspondent of the *Prairie Farmer* writes from the southern part of Illinois, that the abundance of acorns, &c., in the woods, is equivalent in way of hog feed to doubling the corn crop, and is not equalled once in forty years. They are exempt from hog cholera, because hogs in the woods never have it. Sweet and Irish potatoes, turnips and cabbages are excellent. No potato rot. Much tobacco, with low prices, and a dead market. Half a cotton crop, at half of last year's prices. Hops fine, not affected by the bad season, no insects. I have picked many burs three inches long. This crop promises to go ahead in "Egypt."

Ladies' Department.

From the Western Rural.

DARNING SOCKS.

BY MRS. S. E. BURTON.

Lucy alone at the window
Softly and cosily rocks,
Busily plying the needle,
Darning her husband's old socks;
Loving and sweet little woman,
Fond of each housewifely care,
No queen in her royal palace
With Lucy in wealth can compare.

White is the floor of the kitchen,
Soft sings the kettle for tea,
And out in the bright Summer garden
Children are sporting in glee.
Down in the clover-clad meadows
Loud rings the blithe mower's steel,
Musical sounds of dear home-life
As sweet, artless Lucy can feel.

Skilfully plying the needle
Over and under the yarn,
Filling sad rents with a patience
Known to those only who darn;
Lucy hems in with her stitches
Thoughts bright with love as a gem,
Happily toiling for Richard,
The dearest and noblest of men!

Swift, and more swift flies the needle,
The meshes are filled one by one;
At last the big holes are all mended,
The week's task of darning is done.
But will Dick—ah! the dear careless fellow!—
Know when his wife sings and rocks,
She fastens her heart in the stitches
She weaves in his old, worn-out socks?

South Haven, Mich., 1866.

HOUSEHOLD ECONOMY.

CONTRIBUTED FOR THE NEW ENGLAND FARMER.

Mr. EDITOR:—I send a few well-tried receipts for your domestic department.

Bread and Butter Pudding.

Five or six slices of stale bread should be buttered and cut about two inches square. Warm a quart of milk; pour a pint over the bread; to the other pint add two tablespoonfuls of fine sugar; a quarter of a nutmeg, and the yolks of four eggs. Pour the whole into a buttered dish and bake twenty minutes. Then cover it with the beaten white of the eggs; set it back and brown. Eat with hard sauce; a tablespoonful of butter beaten with nine spoonfuls of sugar.

Cake Pudding.

Three tablespoonfuls of melted butter, mixed while warm, with a cup of powdered sugar; one pint of sifted flour; two teaspoons of cream of tartar; one of soda; one teacup of sweet milk; one egg. Beat hard, and bake twenty minutes in a small oval or round dish.

Sauce. Two cups of sugar worked with half a cup of butter; one cup of wine, a teaspoonful at a time. Beat hard; set it into a pan of hot water ten or fifteen minutes; serve hot.

Ginger Pudding, (from Kentucky.)

Three cups of molasses; one cup of butter; two teaspoons of saleratus; four eggs; four and a half cups of flour; ginger and nutmeg. Steam or bake. To be eaten with any kind of nice sauce. This pudding will keep any reasonable length of time, and is good either hot or cold. MARY.

Parsonsfield, Me., Nov. 12, 1866.

Cheap Cookies.

One cup of cream; one-half cup of butter; one and a half cups of sugar; two eggs; one teaspoonful saleratus. Mould as soft as you can roll, and bake in a quick oven.

Newport, N. H., Oct., 1866. NELLIE.

REMARKS.—We hope that our lady readers will see that this department of our paper is well supplied during the coming volume.

For the New England Farmer.

HOUSEHOLD CONVENIENCES.

Backwardness of Farmers in the adoption of facilities—Growing distaste for household duties—Domestics afford little relief—Ambition for display—Tendency to a system of communism—Failure of labor-saving machines—Simplicity of living and the exercise of common sense suggested as a remedy.

I fully agree with Jenny and other correspondents, who wrote upon this subject last winter, that farmers are too slow in adopting the modern improvements and convenient arrangements for facilitating house work; that either they fail to see and appreciate the benefits which science and art are continually offering to man to administer to his comfort and alleviate his toils, or they are unwilling to make the effort to possess them. In this respect farmers fall behind residents of cities and villages; still, there is visible progress in the way of improvement, and in the older States, woman's labor in the farmer's household is becoming more limited every year. Our grandmothers performed many kinds of work that are not now required of their grand-daughters. Spinning, weaving, most of the tailoring and dressmaking for the family, milking, bringing in wood, water, &c., are no longer her unavoidable duties. Besides this abridgment of labor, our young farmer's wife can command helps and conveniences that the women of two generations ago never dreamed of. And there are fair prospects that the farm-house will be relieved of the care and labor of the dairy, by selling milk to supply the cities, and by transferring butter and cheese-making to large establishments.

While these improvements are going forward, there are heard from every side loud lamentations over the drudgery of house work, especially over the hard lot of farmers' wives and daughters. House-work is becoming decidedly unpopular. American girls scorn the idea of doing it for others, and are hardly willing to do it for themselves, though perfectly able. Even the foreign help who are now doing it, quit it at the first opportunity. Women are breaking down early in life, notwithstanding all the abridgment of their labors and the conveniences that have been introduced into our houses, and they ask for a further relief.

The truth is we are departing from the simplicity of life of our forefathers, and are rapidly adopting the ways of a luxuriant and extravagant people. Ambition and pride bind upon us burdens grievous to be borne. No one is willing to be outdone by his neighbor. The poor imitate the example of the rich. Those without servants think they must do as those who have them, and those with one must do as well as those who have two or more. Housekeeping is a wearisome complication of cares, anxieties and labors, and no wonder woman is breaking down early in life, and sighs for further relief. Something, it is evident, must be done, if men wish to avoid boarding houses and maintain households at moderate expense.

Whence shall come this desired relief? Will it be found in keeping domestics? The expense question decides this mode at once for the majority of families, and many women who are so favored as to have them, talk of their care and trouble as a burden. Will it come in a further limitation of the kinds of work done in the house? Whoever reads the *Atlantic* for 1866 will perceive that Mrs. Stowe in her "Chimney Corner Talks," proposes a great change by advocating the adoption of the French mode of living. Society is rapidly preparing for the change, and I expect, ere long, house-keepers will demand that washing, ironing, bread-making and the greater part or the whole of cooking shall be done out of the house. In cities and villages this may be a judicious and economical arrangement; but among farmers the plan has some serious objections, apparent to all.

Will the desired relief be found in greater facilities for doing work? Would that it were in the power of cunning craftsmen to devise means to carry on the household machinery

smoothly, pleasantly and easily. Here arises the great difficulty; no sooner are means developed for relieving the necessities or promoting the comfort of man, than new wants and demands are created. To illustrate: it might seem a natural supposition that the introduction of the cook-stove would have materially lessened the labor of cooking. Is this the fact? Are not more hours spent now in preparing food than in the days of the brick oven and fire-place? In those times baking day was a reality; it meant, in cool weather, at least a week's supply. When the huge pot was hung for a boiled dish, the good house-keeper had the satisfaction of knowing she was not obliged to repeat the operation the next day. With the stove has come a multiplicity of dishes; a desire for a great variety at every meal, and the habit of serving everything freshly cooked and smoking hot. Hence the work of cooking is constantly on hand, and the kitchen fires seldom go out, even in hot weather. The care, vexation and time spent in this perpetual preparation of little messes, none can tell who have not been fully engaged in it. Three times a day must mother or daughter bow down before that ruthless tyrant of a cook-stove, to do the hardest and most unhealthy part of house-keeping, because custom has dictated that every meal must be freshly cooked. No matter how warm and bright the weather, how inviting the fields or garden, how urgent may be other duties, how great the longing for the recreations and pleasures of society, of reading or study, cooking must be first, and receive the woman's best energies.

Again, when the sewing machine was invented, it was thought the sewing of a family would be a pastime, and needle women began to fear their occupation was gone. But no sooner was it brought into general use, than fashion or folly dictated there shall be more work put into every garment. There must be quilting, trimming and embroidery, so that as much time as ever is required to supply a lady's wardrobe.

Again, when our good wives and daughters have toiled faithfully six days in the week, ought not the seventh to be to them a day of rest as well as to man? But in how many families is there a wide departure from the Jewish strictness of observing the Sabbath. The growing custom of making the dinner of that day the best of the week, well nigh deprives woman of this brief respite from cooking. Add to this extra work in the kitchen, the time and attention bestowed upon the elaborate toilet, now considered necessary to appear respectable at church, and the entertaining of callers and visitors, which are expected in many families, and the day brings only excitement and fatigue, leaving the house-keeper to rise Monday morning, refreshed neither in body nor spirit. Will greater household facilities bring relief here?

From these and similar illustrations which might be given, it is apparent that inventive genius cannot furnish the relief which women need. House-keeping is pretty much what we make it, and for its easy and successful accomplishment, more depends upon the controlling mind, than the material agencies at command. These latter are highly useful in their place, but are only helps or secondary means. Here, as in every department of labor, knowledge is all powerful; the knowledge and ability to perform the varied work of the house quietly and expeditiously, and she who aspires to be at its head has not half learned her task unless she has thoroughly studied and can practice strict economy of time and strength.

It is equally plain that woman's labors increase or diminish with the slightest variation in the style of living; and that wherever both heads of the family aim at simplicity of life, endeavor to adopt ideas and habits that accord with their circumstances, and are becoming enlightened men and women, our mothers and wives need not be overburdened with the legitimate duties of the household. N. S. T.

THE
NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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MONTHLY.

SIMON BROWN, S. FLETCHER, } Editors.

FEBRUARY THOUGHTS.

I'm the spirit of snow, and my compass is wide;
I can fall in the storm, in the wind I can ride;
I am white, I am pure, I am tender, I'm fair,
I was born in the seas, to the seas I repair;
By frost I am harden'd, by wet I'm destroyed,
And, united with liquid, to Ocean decoy'd.

J. R. Prior.

FEBRUARY in New England is usually a rough, cold month. Snows have accumulated, so that the roads are often obstructed, and travelling on them is tedious and slow. Especially is this the case in the hilly and mountainous parts of New England, where the population is thin, and travel has not been sufficiently constant to keep the roads open. To do this, however, would be a task of no ordinary kind. Old Boreas is king. He roams where he pleases. Sweeps through the valleys, scours the plains, or roars over the mountain tops unrestricted in his vagaries, heaping the snow into fantastic forms, or sending it in whirling clouds through the freezing air.

Those who live in thickly-settled communities, where the public road is always kept open from nearly every farm-house in the town to the centre of the village, can have only a slight appreciation of the difficulties with which those have to contend who live where the population is sparse. In some districts, if one rides a dozen miles, he will be obliged to pass over pastures and meadows, through swamps and woods, cross doubtful streams, and go circuitous routes through valleys and over hills, in order to reach his destined goal. He will not be able to keep in the highway half the time. Then, if night approaches, and his faithful steed shows signs of fatigue, those dismal forebodings will be likely to take possession of the mind, which poets, speaking of night-bound and snow-bewildered travellers, have so vividly portrayed in the books:

"See, how the traveller scarce resists the storm!
Mark, how he strives along with fainting feet!
And doomed, without the friendly welcome warm,
To perish in its freezing winding-sheet!"

Scarcely anything is more bewildering to the mind, than to be abroad in a winter night, when the earth is covered with snow, and we lose the points of compass, and the well-known landmarks are covered up, or only stand like dim and uncertain spectres in the dusky gloom

of night. When, added to this uncertainty, one is benumbed with cold and fatigued with exertion, the sensation becomes one of almost utter hopelessness and despondency, and it requires all the energy and courage we can command, not to give way to the stupor which steals over us like the power of some potent drug.

A painful occurrence took place several years ago in the Green Mountains of Vermont, where a man, his wife and a young babe perished in the snow, by bewilderment and fatigue.

A wonderful story is also told of one *Elizabeth Woodcock*, who was buried in the snow, near Cambridge, England, on the 2d of February, 1799, where she remained *eight days and nights!* She was taken out alive, but somewhat frozen, and lived until the 13th of the following July.

In mountainous regions in Europe, among the Alps, for instance, and it is quite probable among the Rocky Mountains of our own country, *snow slides* occur, which sometimes cover large tracts, overwhelming everything in their course, as did the land-slide in the White Mountains.

On the 19th of March, 1755, a small cluster of houses at a place called Bergemotetto, in the upper valley of Stura, was entirely overwhelmed by two vast bodies of snow that tumbled down from a neighboring mountain. Several houses were engulphed, in which were twenty-two persons in all, covered with a high mountain of snow. Great efforts were made to rescue them, but without success, until on the 25th day of April, *thirty-seven* days after they were buried! the astonished laborers heard a feeble cry of "help, my brother!" A large opening was then made, when Joseph Rochia went down and found his wife, alive, whose age was about forty-five, a sister thirty-five, and a daughter thirteen years old. These were raised on their shoulders to men above, who pulled them up as if from the grave, and so wasted that they appeared like skeletons. A boy six years old had died.

All these persons happened to be in a stable where there were six goats, an ass, and some fowls. On looking out, the wife perceived an avalanche breaking down, ran back into the stable, and all got into the rack and manger. In three minutes the mass descended and the roof broke over their heads, but the manger was under the main prop of the stable and resisted the weight of the snow above. The sister had fifteen chestnuts in her pocket; two of the goats gave milk, and by great efforts they got hay from over their heads for them, and thus sustained their lives. During the whole thirty-seven days they saw not one ray of light; yet for about twenty days they had some notice of night and day from the crowing of the fowls, until the latter died.

All these facts were related and attested on the 16th of May, 1755, the next month after the persons were exhumed.

Happily for us in our beloved New England, in our delightful climate, marked by no great extreme of heat or cold of long continuance, nature has greatly exempted us from the terrible revulsions which agitate and terrify the mind in less favored regions of the world. In those countries where *earthquakes* occur, the people must live in a constant state of fear and apprehension, as though the sword of Damocles were hung over them; or in China, where almost every movable thing is instantly swept from the earth, or navies engulphed in the boiling ocean by the terrible *Typhoon;* or in Arabia, where the air becomes red, and the day is darkened by the clouds of sand which fill the air, sent up by the stifling and pestiferous *Simoom;* or, nearer home, where *hurricanes* and *tornados* give little warning of the terrible destruction they are about to make!

Let us be grateful, then, that our "lot is cast in pleasant places;" that we lie down and sleep without fear that the solid earth may be shaken and rent under us, or that the mountain will fall on us, or that the mighty atmosphere will sweep ourselves and our goods away!

February affords opportunity for such trains of thought, and they will enrich us as much as abundant products of the soil or income from notes or bonds. We want a *contented mind*, because that is a continual feast. Nothing so much tends to this as the study of Nature about us, the study of ourselves, and a cheerful, loving heart, ever overflowing with grateful emotions.

FARMING IN FEBRUARY.

There is an old story about *St. Anthony*, the Patriarch of Monks, who lived in Egypt a great many years ago, who was particularly solicitous about *animals*. It was probably from his practices that the custom arose of *blessings passed on animals*, as is still practiced at

Rome. He regarded no beasts, birds or fish as hateful. So on a particular day the "*Benediction of Beasts*" is annually performed at Rome! It lasts for some days, and every Roman, from the Pope to the peasant, who has a horse, a mule, or an ass, sends them to be blessed at St. Anthony's shrine. Even the English go with their job horses and favorite dogs, get them sprinkled, sanctified, and placed under the protection of this saint. The same practice exists in Madrid, Spain, where mules and other useful animals receive a blessing in St. Anthony's church!

We cannot but have some respect for such customs, when they tend to foster good feelings, and increase kind treatment to the animals under our charge, which are indispensable to our comfort and happiness.

Some of the days in *February* could not be better spent by certain persons who hire horses at livery stables, by teamsters in cities, and by some farmers who feed light and load heavy, than by attending upon the services at St. Anthony's church!

Reform among us, as farmers, is still needed in regard to the management of farm stock, as relates to treatment,—that is, influence over them,—as well as to the modes of feeding. An angry word and then a blow, is still the practice with some persons, whenever an animal varies from the strict line of practice required of it. This does not arise so much from violent temper, or ill-feeling, as from a thoughtless habit,—but it tells upon the animals, nevertheless.

A little practice will enable an observing person to decide what herds of cattle, in the barn, are treated with kindness and consideration, and those which are controlled with harsh words and blows. It cannot be possible that animals who live in constant fear, who are excited whenever their master is present, and tremble at his approach, can be in that state of rest and composure which is necessary to secure the greatest product from them in flesh, work or milk.

An inconsiderate *overloading* of horses and oxen is one of the most common cruelties inflicted upon them. More good horses are spoiled in this way than in any other; and the better they are to begin with, the more likely they are to be ruined.

Every farmer should know the dimensions of the cart or wagon he uses, and then what a square foot or a cubic yard of sand, gravel, stone, lumber or *manure* will weigh. Of course, these will vary under certain circumstances,—as a cart full of green manure will weigh twice as much as the same cart full of that which has been composted. A cord of fresh dung will weigh about 9289 pounds! or nearly *four and a half tons!* And yet half a cord is often the load which a pair of oxen are expected to haul over ploughed ground, where the feet of the cattle and the wheels of the cart sink into the soil to the depth of six or eight inches! Is that merciful treatment? A third of a cord is thrown upon a cart for a single horse to drag over or through a similar surface, where he can get no substantial foothold, and where the wheels are trigged at every step by the great unevenness of the furrows. And yet he is required to haul over such a place *more than a ton and a half.*

Is it a matter of wonder that so many of our horses are afflicted with *spring halt, bone* and *bog spavin, ringbone, fistulous withers, false quarter, sandcrack, broken knees, heaves, quittor*, and a host of other diseases, some of which are common to half the horses we see!

Let us, farmers, think more of these things, now that we have comparative leisure, and are enjoying around our firesides the delights of home, kindred and friends. Let us not only *think*, but *talk* them over, recall past practices, and decide whether we have heretofore given to our business such powers of the mind, and such skill, as will bring us the largest rewards for our labor.

February winds and snows are not our care. Let them whistle and fly, while we mark out our duties and form our resolutions for the future.

Nice Pork on a Good Farm.—We saw, the other day, at Mr. David Buttrick's, in Concord, Mass., three very fine hogs, that must dress between 400 and 500 lbs. each. They are thirteen months old, have always been fed together and are so nearly equal in size, that it is difficult to decide which will weigh the most. Not only his hogs but his fields, buildings, and other stock, with the numerous conveniences of a good farm, show excellent management, and are evidence of what can be accomplished by an industrious, persevering man on the "worn-out" soil of old Massachusetts, at plain, ordinary farming.

VERMONT STATE AGRICULTURAL SOCIETY.

The annual meeting of this society was held in Rutland, Jan. 2d, President J. W. Colburn in the chair. The treasurer's report shows $2015.00 surplus receipts after deducting expenses paid for the year, and $8094.15 now in the treasury. Resolutions in favor of protection of the wool-growing interest to the extent of the House tariff bill were passed. The following officers were elected:

President—John Gregory, Northfield.
Vice-Presidents—Henry Keyes, Newbury; Henry G. Root, Bennington; Henry S. Morse, Shelburne; Victor Wright, Middlebury.
Treasurer—Joseph W. Colburn, Smithfield.
Secretary—Henry Clark, Rutland.
Board of Directors—Edwin Hammond, Middlebury; Wm. R. Sanford, Orwell; George Campbell, Westminster; Elijah Cleaveland, Coventry; Henry Hayward, Clarendon; Henry B. Kent, Dorset; Wm. Q. Brown, Fairhaven; N. B. Safford, White River Junction; Crosby Miller, Pomfret; Lawrence Brainard, Jr., St. Albans; David Goodall, Brattleboro; Henry Chase, Lyndon; Henry Boynton, Woodstock; Pitt W. Hyde, Hydeville; E. S. Stowell, Cornwall; James A Shedd, Burlington.

Hon. Joseph W. Colburn, the retiring President, was invited to deliver the address at the next annual meeting of the Society. He also presented a memorial to Congress which was unanimously adopted.

Hon. Edwin Hammond was elected a member of the National Wool-Growers' Association, and the Society accepted the provisions of the legislature, changing the name of the Society to the "Vermont State Agricultural Society and Wool-Growers' Association."

"Feeding."—The farmers of the Connecticut valley have been in the habit of buying oxen in the fall which were only in fair, thrifty condition, and feeding out to them not only their own surplus grain, but buying western corn in large quantities. One of the great items of profit from this course is the rich manure which is thus produced. Last fall these feeders paid as high as 14c. per lb. for much of their stock. After feeding on meal through the winter, and transforming these "stores" into the celebrated "River cattle," the market had so declined that these farmers were obliged to sell at a less price per pound than they gave. Those who fed sheep suffered greater losses even than those who fed cattle. In consequence of these reverses, and also in consequence of the great advance in the price of corn, we understand that but very few of these River farmers will feed either cattle or sheep the coming winter. Our cattle reporter informs us that he has not heard of any being bought for this purpose, as yet, either at Brighton or Cambridge.

For the New England Farmer.

FIRST AGRICULTURAL FAIR AT CHESTER, N. H.

Mr. Editor:—Thoughts, like seeds, sprout, but often wither away through neglect, or a barren soil. Yet, by digging into the soil and turning it over and over to the sun and air, the earth may at last be so enriched that the feeble roots are enabled to draw sufficient nourishment to force the buds into shoots, and, in time, by constant labor and watchfulness, such as pinching in, pruning, and spading up the soil, it attains its growth and greets the eye with its fruits.

A few years since, in this town, some individuals endeavored to plant a seed called "*Agricultural Society*," and thought it would grow, even if it were not watched and protected, and as is too often the case when transplanting a seedling from the nursery, either owing to the mental soil of this town at that time, or lack of energy on the part of those who planted the seed, it grew feebly and at last apparently died,—a death called "*sine die*." But this fall, about the middle of October, to the surprise of those who planted the seed, and amazement of those who would not, or did not, assist in keeping the feeble plant from pining away, it started out anew and grew rapidly into a tree, which bore such a great abundance, and so large a variety, as almost to endanger the branches! But the inhabitants of the town, seeing its danger, rallied to its support, and with the aid of tables, benches, settees, cord and twine, so secured its brittle limbs that the fruit hung on, and ripened to the satisfaction of all interested.

I have heard it said, that if the farmers of this town will keep up their energy, with the aid of God, and the ladies of this town,—who, by the way, are never backward in a good cause, or niggardly of their time,—it will again display its fruits, even if it takes the Town Hall and horse sheds to hold it! What is most astonishing about the tree, is, that it only required eight or ten days to stir the earth about its roots, before it blossomed and ripened the fruit! The blossoms were but few, yet by a miracle its fruit was so abundant as to fill the Town Hall, and barely afford room for the astonished visitors to look and express their gratitude. And that the names of those who so readily came forward to its support may not be lost, I pray you to find room in your widely circulating journal, not only for their names, but also for the wonderful variety of fruits, flowers, grain and vegetables; and last, but not least, the needle-work and drawings that were wrapped around its trunk, for its future support and protection from the chilling winds

which this town is at times liable to, when a break occurs in the minds of its inhabitants:—

James M. Kent presented potatoes, mongrel pumpkins—a curious freak of nature; Lucien Kent, Winningstadt and flat Dutch cabbage, parsnips, beets, 2 varieties tomatoes, 8 do. apples; David L. Bachelder, a new variety of parching corn; Mrs. Marden, giant English turnips, blood beets; Page Long, seed cucumbers, extra long; C. H. Knowles, 2 varieties potatoes, seed corn, 7 varieties apples, giant Savoy cabbages, a sample of 13 qts. of beans, which grew on 15 square feet of ground, being at the rate of 90 bushels to an acre! George Hook, 6 varieties apples, extra large Dutch cabbages; George Cammet, beans, and 2 fine samples of seed corn; Charles Kent, 4 new varieties potatoes, from the seed balls; George Bell, field, sweet, and California pumpkins, 3 varieties of fowls, 3 do. monstrous potatoes, average 16 inches in circumference, being an average sample of 200 bushels! George Weeks, sorghum cane, 2 varieties parching corn; Charles Willcomb, carrots, large pumpkins, squashes, onions, beets, 5 varieties apples; Arthur S. Leonard, 9 do. potatoes, seed corn, 7 varieties apples, fancy baskets for house plants, Brahma, Chittagongs, black Spanish and white Leghorn fowls, fantailed doves; Thomas I. Melvin, 15 varieties apples, 4 do. mammoth blood and mangel wurzel beets, carrots, turnips, seed corn, planted May 25, harvested Sept. 1; Wm. Crawford, French turnips, carrots, onions, white-flint corn, and potatoes of the Orono species—I saw a few hills of these potatoes dug; the product of a hill weighed 9½ lbs.; they were planted very near together, and turned out at the rate of 600 bushels to an acre! J. L. Lovett exhibited 5 varieties seed potatoes; Josiah Fitts, garden vegetables, 4 varieties apples, and pears; Francis Hazelton, 7 varieties apples, chickory roots, extra large pumpkins, squashes; N. S. Morse, 2 very nice plates apples and potatoes; John W. Noyes, Hubbard squashes, 21 varieties apples, Concord, Delaware, Diana, Maine and Rogers hybrid grapes, No. 19; I. T. Kendall, 5 varieties beautiful apples, French turnips, splendid watermelons, French squash; J. S. Corning, watermelons, squashes, trace corn; H. Knights, 5 varieties seedling potatoes; C. L. Weymouth, large Hubbard squashes; S. V. Osgood, giant Swedish turnips; D. C. Swain, mongrel crookneck squash; G. C. Fitts, French squash, ground almonds, seed corn; Fred. Morse, pumpkins, 5 varieties apples; George Willcomb, large pumpkins, corn and cabbages; Amos Ball, trace corn, beans, large potatoes; John Wason, broom corn, extra large French turnips, 13 varieties splendid apples; Roxanna Stevens, 2 do. tomatoes; Ebenezer Marden, early Canada corn, citron melons, French turnips, 13 varieties apples, basket chestnuts in the burr opened by frost; Wm. P. W. Whittimore, 5 varieties seed potatoes, buckwheat raised on pine plains at the rate of 45 bushels to an acre, peppers; Wm. Tenney, white winter wheat, corn, 18 varieties apples, very nice and large, 3 do. pears, Duchess, Vicar of Winkfield, L. B. DeJersey; G. W. Dolben, a sample of seedling apples, or natural Baldwin; Wm. True, a very curious and interesting freak of nature on a turnip; C. S. Dolf, cabbages; John Robinson, 6 varieties apples, good; James R. Gordon, 6 do. potatoes, large and nice; S. S. Chamberlin, pumpkins, Hubbard and marrow squashes, 3 varieties potatoes, 3 do. tomatoes, cabbages, 4 varieties beans, champion peas, brown, parching and Stowell's evergreen sweet corn,—19 ears weighed 18¾ lbs.,—carrots, mangel wurzels, onions, French turnips, Isabella grapes, apples, and potatoes "from the moon," orange gourds.

S. F. Leonard: this gentleman was first and foremost in the management of the fair, and entered a large variety of fruits, grain and vegetables; the name of each I should be pleased to give, but as he neglected to hand them in, I am unable to do so.

Ladies' Department.

Mrs. L. Moore, house plants, flowers and home-made rug; Mrs. L. Lawrence, flowers and house plants; Mrs. H. M. Hazelton, E. I. Hazelton, L. Hazelton, I. Corning, C. H. Knowles, home-made rugs, each; Miss N. A. Noyes, worsted work; Miss S. E. Bell, paintings; Mrs. Kent, pressed flowers, moss baskets, flowers, house plants; Mrs. Jno. Hazelton, house plants, worsted work and fancy articles; Miss A. Mitchel, flowers and baskets; Mrs. F. Page, Mrs. Willcomb, Mrs. Rollins, quilts, each.

Several others entered articles too late to take their names, or contest for the premiums. The names of those who were awarded premiums I have been unable to obtain, after a number of weeks of inquiry, so that part I must omit to give you. I will write you about grapes in a few weeks, if I have not already worn your patience out at this time.

S. S. Chamberlin.

Chester, N. H., Dec. 25, 1866.

Remarks.—In a lecture to which we once listened, the speaker pressed upon the attention of his hearers the idea that, "when we work for man, we are working for God." So our correspondent labored—and labored well—on *Christmas Day*, to present to us, and the numerous readers of the Farmer in his own and the neighboring towns, an account of the first *agricultural fair* in the "ancient and honorable" town of Chester. We have heard it spoken of as a success which greatly surprised the movers themselves. It was like "getting into law;" when they had got it started they couldn't stop it. The example will be valua-

ble to the towns in that region. The towns of Chester, Derry, Hampstead, Candia, Auburn and Raymond could get up an annual fair, and make a display of stock, crops and fruits that would be creditable to any county in New England. We are obliged to our correspondent for this favor, and hope he will soon send us an account of his grapes.

For the New England Farmer.

TIGHT BARNS.

I have noticed lately that some of your correspondents have again brought up the subject of tight barns, contending that hay will keep better in such; also, that it will keep better, and as I understand them to say would dry better in the barn than in the stack. However the facts or theories in the case may be, it is certain that the opinion of most farmers is against all this.

Some farmers put their early cut hay, which is supposed to contain more sap than that which is cut later, on the scaffold side of the barn. And I think farmers generally put their greenest hay on the scaffolds or lofts, rather than into bays which are generally much wider and deeper. So in the season of haying, barns are left more open for the draught of air than at other seasons of the year.

I have put good sweet hay into the tight, nicely built stables in the village, where there was no ventilation, and in a few weeks the outside would be mouldy and bad. And I have heard other villagers that had tight barns say, that they did not buy hay out of the fields because they had found that it would not keep in their barns.

We universally find that corn barns are made very open, and the cribs narrow, for the better circulation of air. I think that both hay and corn barns should have ventilation at the top as well as near the bottom.

Hay from the salt marsh is usually stacked out; and many a time I have heard farmers say their hay was not dry enough to put into the barn so they would stack it. Hay in the stack will dry better by being raised up from the ground, to secure a draught of air underneath. Many even go so far as to build the stack hollow; that is, they fill a bag full of hay, and on commencing a stack set the bag upright in the middle of the stack, and as they proceed draw the bag up until nearly finished when some small sticks are laid over the hole after the bag is drawn out, and a little more hay is pitched on, and the top finished. This method of stacking hay has been found to work admirably where hay must be put up not more than half cured, as it is sometimes on the marshes on account of tides.

I am aware that much depends on the weather about drying hay that is stacked green; but I think the more air we get, either by stacking hollow, or by big cracks in the barn, the better for hay, unless it is perfectly dry.

J. W. Brown.

Kensington, N. H., Nov. 19, 1866.

Barometers.—In connection with the unqualified condemnation of the barometer by the Solons of the New York Institute, the following statement is made in the *Rural American*, by W. S. Langdon, of Lisbon, Ill.:—

First, a person having one must ascertain from observation the average, or mean height of the mercurial column; then knowing that he will find that his barometer, (if a good one) will indicate *wind*, as well as rain; but generally the *fall* is more rapid for wind than for rain. If the mercury is from any cause *above* the mean, and it begins to fall, he should not expect a storm; but if at the mean, or below it, a storm of some degree of severity will surely follow a fall. A storm will follow a great and rapid *rise*, when the wind is northeast, and also the same with a fall in the mercury, with the wind in that quarter; but never during my three years' observation has a storm occurred (with the above exception) without notice of from three hours to two days beforehand.

A Hint in Breeding.—Mr. Torr, the well-known breeder of Short-Horn cattle and Leicester sheep, in the course of some remarks at the recent letting of the latter, touching on breeding in general, said:

"The way to establish uniformity or family likeness is to begin by putting the best male to the best female, and to continue to put *the* best *to* the best;" secondly, "not to put opposite characters together, or the traits of both will be lost; but if any fresh characteristic is required to be imparted to the issue of present stock animals, this must be done by degrees, or by that discreet selection which will yield a little more wool, or size and substance, the first year, and a little more and more in the second and third generations, and so on."

Canada Thistles.—A writer in the *Western Rural* tells how he killed acres of Canada thistles, thus:—"Plough early in the spring, as soon as they are all out of the ground. As soon as they are up the second time, plough or cultivate with a wheeled cultivator, and so continue as often as they come in sight, which will be about three or four times during the summer. If the season is wet it is all the more favorable for killing—others don't agree with me—because they sprout and make their appearance much more certainly than in a dry season. In a dry season the roots lie in the ground without coming up; in a warm, wet season they come up three or four times, and that is their end if they are as often plowed."

CELOSIA.—[Aurea Pyramidalis.]

This magnificent, free-flowering, graceful-growing plant, belongs, with cocks-comb, to the natural order *Amarantaceæ*. It produces in the greatest profusion spikes of the most beautiful feathery-looking flowers, which are well represented in the annexed engraving, copied from Washburn & Co.'s Catalogue of Flower and Vegetable Seeds, in which three varieties are described. The variety Celosia Argentea produces its flowers in spikes, like a Gomphrena (*Globe Amaranthus*,) but much longer; and, if gathered when young, they are valuable for winter bouquets. Plants of the Celosia flower freely if planted out in June in a warm, sheltered situation. Grown in pots, they are the most elegant of greenhouse and conservatory plants, where, with a little management, they may be had in flower the whole winter, growing freely in rich loamy soil. Half-hardy annuals.

HOP CULTURE IN ENGLAND.

A careful attempt has been made by a correspondent of the London *Times* to ascertain the number of acres of hops under cultivation in 1866. As long as the duties on hops continued, a Parliamentary return was published every year, showing the acreage devoted to that cultivation. The duty was abolished in 1862, and since that time there have been no statistics taken of the area under cultivation.

The present inquiry has embraced a survey of forty-five parishes in East Kent, surrounding the city of Canterbury. In 1862 there were in these forty-five parishes 3259½ acres of hop gardens. In the present year there are 4195¼ acres, showing an increase of over thirty per cent., besides 411 acres of young hops not yet come into bearing. Of the 4195¼ acres, 2715¼ are engaged in growing "Goldings," which are reputed to be the highest class grown in England; the remaining 1480 acres are devoted to "Grapes," "Jones," "Cullings," a few "Colegates," and some less known descriptions. The growers have made no complaints since the duty was removed; there could hardly be named five years in succession that prices have stood so high as during the last five, and it is computed that the produce of each of those years would pay for the land on which it was grown. Looking to current prices, it would seem there is still abundant room for further increase.

The Cattle Plague in England.—At last the cattle plague in Britain has come to an end, after destroying upward of two hundred thousand animals—the aggregate value of which must have been considerably upward of a million sterling. It is estimated that about five per cent. of the cattle of England perished through this dreadful murrain.

Crops.—The *Commissioner of Agriculture* estimates the crops as follows: wheat, 180,000,000 bushels; corn, 880,000,000, an increase of 400,000,000 bushels over that of 1859; cotton, 1,750,000 bales of 400 pounds each.

WINTER MANAGEMENT OF MANURE.

There are many things necessary to be observed in good farming, many minor details, which, if neglected, are quite sure to result in loss in the crops, rather than profit. There are two things that are absolutely indispensable, without the employment of which we doubt whether *profitable* crops can be raised on any New England soils, for many years in succession. The first of these and the only one to which we propose to give attention at the present time, is the *Winter Management of Manure.*

Considerable change has taken place in this item of farm husbandry during the last twenty years, but there is nothing yet like a system of management in it. On many farms very good practices prevail one year that are utterly neglected the next—although it is admitted by the operator, that a *system* has many advantages over a chance practice. Some of the difficulties attending the handling and application of manures are:—

1. That it is unpleasant and expensive to overhaul and apply manure in a green condition, mingled with refuse fodder, such as corn stalks and buts, meadow hay and straw.

2. Manure in such condition is in a form too adhesive and compact to be used with the greatest advantage. The object should be to get the largest possible crop from the manure, the first year it is applied. In order to secure this, it must be fermented, and made fine and easily separated by that process, or it must be divided by the admixture of some other substance, such as loam, sand, sawdust, or muck —the latter being altogether the best.

Before proceeding further, let us solve the question, *What is Muck?* and then we shall be able to decide whether the process which we intend to describe for the winter management of manure, will commend itself to the judgment of most farmers. *Muck* is any mass of decaying *vegetable* matter. Not *mud*, as some term it, which is a mixture of soil and sand, or gravel. In enlarging the manure heaps, we add vegetable matter, in various forms, such as the refuse of the barn, to which weeds are added, brakes, rushes, coarse grass, moss leaves, and even small bushes—everything that will readily decay and become *muck.*

What we attempt to do in our limited and painstaking way, Nature has already done for us on an extended scale. She began her work centuries ago, and now has completed it, left it at our hands, and invites us to gather it up and use it. It is scattered over the New England States in endless quantity, in the meadows, in the swamps, and in the valleys between the hills—the muck beds of New England—and worth more to us than all the gold beds of California.

Muck *is* manure. No proverb has more truth than this, that "*Muck is the mother of the meal chest.*" With unwearied pains we fill our barns annually with vegetable matter, not only to sustain our animals, but to convert that mass of vegetable matter into manure, or muck. The process is a quicker one than Nature's, but how trifling in extent compared with hers! The result of that conversion is a heavy, highly-concentrated fertilizer, without the use of which little can be profitably done in New England farming, or the West either, eventually.

How much this vegetable matter is "animalized," as it is called, if any, by passing through the cattle, we do not know. But that it has a powerful influence on the condition of the soil and the growth of plants, is established beyond dispute.

Nature's process is a slower one, but she comes at last to something like the same results. She sends upon the sandy plain or gravelly knoll, a coarse, scanty herbage, which dies, falls to the ground, decays, and becomes *muck*, humus, or earth. This quickens the soil, the next crop is larger, and dies and decays as did the first; but now the soil has power to germinate seeds which are brought upon it by winds or animals, and soon bushes, or young trees appear. These are partially sustained by the atmosphere, and become clothed with a rank foliage which they annually shed upon and completely cover the surface. This process has been repeated in thousands of instances, when, at length, some flood has covered the surface until all vegetable life was extinct, or some raging fire swept through the forest, burning everything but the larger trunks of the trees. The ravages of insects and the tooth of time gradually bring these to the ground, where they lose all their form and mingle with the common mass. In muck meadows, the accumulation has been gradually formed by the annual decay of small bushes and the rank grasses which have grown upon them; though in many instances there are

abundant evidences that the surface was once covered with a heavy growth of trees.

Through the aid of our stock, we convert vegetable matter into muck in twenty-four hours. Nature, in her process, has probably occupied half as many thousand years! We cannot wait for her, and will therefore avail ourselves of her free-will offering as a help to our own exertions.

As perfect an analysis as can well be made—repeatedly tried—shows that cow dung and good muck are nearly the same thing. Dr. DANA says:—"Departing from cow dung and wandering through all the varieties of animal and vegetable manures, we land in a peat bog. The substance under our feet is analyzed and found to be cow dung without its musky breath of cow odor, or the power of generating ammonia, except in some varieties of peat. Add three per cent. of potash to muck and it becomes the same as cow dung." If this be so, will you not grasp it as the miner does the glittering gold that he turns up with infinite labor from the bowels of the earth? Now that we have examined the materials to be used, let us suggest how to

Compound them during the Winter.

In the first place, the muck to be used should be thrown out a year beforehand, and carted into the cellar when as dry as it can be, in the open air. It is estimated that a cord of green peat weighs 9216 lbs.; but if quite dry loses three-fourths of its weight. So that more than one-half the cost of hauling is saved by carting it when dry. Besides this, wet muck will not perform the service desired, that of absorbing and holding the fluid portions of the manure.

Cart the muck in, therefore, when it is dry, and leave it in a long window, where it will be at a convenient shovelling distance from the fresh droppings after they are removed from the stalls. Then, as often as twice a week—each day is better—cover the droppings with the muck. The heap should have no long litter with it. If not convenient to cut it, keep it as much by itself as possible, and cart it out in the spring and ferment it. If the hay, straw, corn buts and stalks are cut before being fed out, what are left may go down with the droppings, as they will not interfere with the shovelling the heap in the spring.

Under such management, a heap of manure may be secured retaining all its rich qualities; even the volatile ammonia is saved. It will require no fermentation, no overhauling two or three times in the spring before it is fit to be used, can be handled rapidly and comfortably, and will be suitable for any crop,—the flower garden, corn field or for broad-casting. It will be black, unctuous and strong. On a farm made up of heavy loams, a slight covering will answer the purpose of saving the fluids and volatile parts, but where the farm is a sandy loam, the peat may be used with great freedom. Indeed, as it is adding manure to manure, pile it on, if the expense of carting in and out is not thought too great.

Where this practice is observed the barn will have none of those sickening odors which disgust the visitor, endanger the health of the stock, and taint the fodder they are to eat, as well as carriages, harness, and the clothing of those who have charge of the barn. If muck cannot be obtained, use loam; sand is infinitely better than nothing; on heavy granite soils it is decidedly beneficial, and if the manure is intended for top-dressing meadows, no other material is so good.

Great care must be observed in the selection of muck, as some of it contains salts that actually prevent the growth of plants. This may be ascertained by exposing it to the air during a growing season. Most specimens, however, that are highly decomposed and of a dark color, will be found to be good.

If the muck beds of New England should attract our farmers as gold did the soldiers of Cortes, its farms would soon teem with an unparalleled fertility.

TOO MUCH STOCK.

It should ever be a rule with the farmer to winter no more stock than he can winter well. A single sheep or cow, properly cared for, and provided with a sufficiency of wholesome and nutritious food, water, and comfortable shelter, will be of more value to the owner than two, poorly kept. It is a singular error in domestic policy, to appropriate to two or more animals the food necessary for one. Yet this singular mistake is often noticeable among those who consider themselves—and are called—good farmers; and, indeed, is, or has been, often practiced by whole communities. In seasons of scarcity, more stock is kept than there is food to supply their wants; consequently the price of hay is unduly raised, and

suffering, often irremediable and ruinous to the community, is the result. The true policy is, to keep just as many animals as will consume the fodder produced on the farm, and no more. But this would not preclude the plan of purchasing fodder—were the money at hand to do so—with the intention of increasing the quantity of manure and the productive power of the farm.

Practices on the farm have greatly changed in this respect, as in many others. We have heard men boast of wintering a cow of common size on a single ton of ordinary hay. Under such a practice, nearly every farm in the neighborhood would lose one or more animals every spring, by some disease induced by want of food and exposure to cold. Swine died, and so did nearly one-half the lambs and calves. Cows and working oxen came out of the winter poor and weak, the former giving but little milk after calving, and the oxen entirely unfit for performing the spring work on the farm. It was a wretched policy. We trust that it is abandoned among all enterprising farmers. Feed your stock well, and they will feed you.

New Hampshire State Agricultural Society.—The annual meeting of this society was held in Nashua, Wednesday, 26th ult., when the following board of officers was elected: President, Frederick Smyth of Manchester; Treasurer, George W. Riddle of Bedford; Secretary, Aaron Young of Portsmouth; Directors, Natt Head of Hooksett, David Gillis of Nashua, Edward Gustine of Keene, Warren F. Daniel of Franklin, James W. Coggswell of Gilmanton. It was voted that the next fair be held on the 10th of September, 1867, and the two following days. The treasurer reported that there were $978.26 in the treasury, and that the late fair at Nashua, (when the weather was extremely wet and stormy) just paid its expenses,

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Canker-Worm in Michigan.—Sanford Howard, Secretary of the Michigan Board of Agriculture, furnishes a valuable communication to the *Western Rural* in relation to the appearance of the canker-worm in Calhoun Co., in that State. Six different orchards have been infested, and the insect is extending. It appears there are also some other parts of the State where it has been found.

AGRICULTURAL ITEMS.

—Good fences always pay better than lawsuits with neighbors.

—In Denmark one cannot cut down his own trees without a permit from Government.

—The *Maine Farmer* says the hay crop of that State this year was about two-thirds of its usual average.

—Drained land is generally ten to twenty degrees warmer in summer, than that in which water stands stagnant.

—The average yield of wheat per acre in Michigan is believed not to exceed ten bushels per acre by a Marshall county correspondent of the *Western Rural.*

—To keep warm feet, line your boots with calfskin dressed soft with the hair on, or with young lamb-skin. Every man should have two pairs in use, and change every day.

—As *layers*, we consider the Spanish and the Black Poland Top-knots altogether unrivalled as abundant layers. The whole family of Hamburgs, including the Bolton Greys, are prolific, and are known as *everlasting layers.*

—It has generally been supposed that there would be great difficulty in rearing chickens hatched in February and March, on account of the cold, but, with proper accommodations or conveniences, Mr. Bement says he has found it more certain than those hatched in June.

—To sort potatoes or apples, stand upright and save the backache. It is more healthy. Make a platform 3x3 feet, with sides 4 or 6 inches high. Leave a gap at one corner, to pour out from. Set the form on a barrel, or other support, and pour a bushel at a time of apples on it, and sort them standing. It is easier to lift up than stoop down.

—For the relief, but not complete cure, of the heaves, a correspondent of the *Rural American* recommends the outside of shell bark, burnt to ashes and mixed with the horse's feed, as much as he can be made to eat, and allow him to eat no dusty hay, especially clover hay.

—Horseman, spare that tree!
'Tis not a hitching post;
Though in its infancy,
Yet soon 'twill shade a host;
Then spare, O, spare that tree,
For he who placed it there
Meant not that it should be
By beast of thine gnawed bare.

—Mr. W. C. Ripley, of Green, N. Y., says that he has practiced with perfect success the following plan for wintering cabbages: "Sink a barrel in the ground to within an inch or two of the top, cut off the heads and fill the barrel full, put on a board to keep out water, and that is all the covering that is needed."

—Mr. W. C. Schofield, of Coventry, Vt., has two Leicester ewes which for the past three years have each brought him two lambs each year. He sold the lambs for sixty dollars, and the wool for

twenty. His four lambs this year weighed 59, 60, 57 and 50 lbs. He has also eight cows from which he has made, since the first of April, 1200 lbs. of butter, and reared four calves. The butter brought him $490 22. So says the *Vermont Farmer*.

—The temperature of the surrounding air has a great effect upon the time required for the rising of the cream; experiment has demonstrated that with the thermometer at

80	degrees,	all the	cream	will rise in	10 hours.
77	"	"	"	12	"
68	"	"	"	18	"
55	"	"	"	24	"
50	"	"	"	36	"
45	"	"	"	43	"

EXTRACTS AND REPLIES.

WHITE BEANS—SEED CORN—BREEDS OF SWINE—ESSEX PIGS.

What kind of white beans are the best for table use, and at the same time bring the highest price in market? Where can I obtain a seed of corn that will yield a large crop, and ripen early in the State of Maine? Is the Columbia County pig equal to the Chester, Suffolk or Cheshire, in quality of pork and ease of fattening?

What is the best breed of pigs in all respects?

Will the Essex pig dress white?

Norton, Dec., 1866. A SUBSCRIBER.

REMARKS.—The white "pea bean," as it is called, is probably the best bean known, all things considered. That is, most people prefer this to any other bean. It is easily raised, ripens before frosts usually come, is always in demand in the market, and at the highest price paid for beans.

Seed corn may be obtained at the seed stores in Boston, and probably in any of the cities in Maine, that will yield a large crop if managed properly, and will ripen in about *ninety* days from the time of planting—provided the seed is put into the ground as soon as the soil is suitable in the spring.

We have no knowledge that is sufficiently reliable on your question about the swine. The pure Chester and the Suffolk fatten quite rapidly, and the pork sometimes lacks that firmness which we find in breeds of larger frames.

The question as to what is the best breed of swine in all respect, is probably as much unsettled as it would be if applied to cattle or horses.

The Essex swine do dress white.

CARE OF BEES IN WINTER.

Having kept bees for the last fifteen years, I have come to the conclusion that the profits of bee-keeping depend more on keeping them well in winter than in summer. I find that one strong, healthy swarm in the spring of the year is worth many weak ones.

In the winter of 1860–61 I put some of my bees in a dry cellar, and I thought it a poor way to winter them, as they came out in the spring rather feeble and with mouldy combs. The next winter I put them in a dark room in the house, with the holes in the honey board open for ventilation. In the month of January, the weather being mild, the bees became over-heated, and in order to save them, I was obliged to carry them out of doors. Since then I have kept them on their summer stand.

I have a few hives that stand on a platform, with wire cloth for a bottom. I think they winter much better than those in hives standing on a board. During the past winter I examined the bees a number of times in the hives standing on a board bottom, and found many of them on the bottom, sometimes being frozen together; at others they were wet, having a very disagreeable smell. On the wire bottom there were a few dead bees, but the wire was dry. To the wire bottom, however, I have two objections: First, the expense; and second, the bees will seal it over so as to make it water-tight.

I intend this winter to make a box or frame two inches deep, just the size of the hive; then remove the hive from the bottom board, put on the frame, fill it with coarse pine sawdust, and then replace the hive. This, I think, will help to keep the bees dry, as the water that drops from the comb will pass through the sawdust. For the top of the hive I intend to lay six small sticks about one-fourth longer than the width of the hive, on the top of the hive, crosswise the frames, then fill the top with clean rye straw. This will give the bees an air chamber and a passage over the frames. Should any person give this arrangement a trial, I should be pleased to hear of it through the NEW ENGLAND FARMER. For the last six years I have made my honey boxes to fit on the frames, using no honey board. J. S. C.

Manchester, Mass., Nov., 1866.

REMARKS.—We hope "J. S. C." will not fail to communicate the result of the proposed experiment, whether others do so or not. We shall be pleased to give our readers the benefit of other facts which the experience of these fifteen years may have developed.

TREATMENT OF CROUP.

Noticing a statement in your paper in regard to the treatment of croup, I will say that, in my opinion, when any one has an attack of the croup, or diptheria, as it is termed, be it a child or an adult, just drink freely of warm water only, until relief is obtained; at the same time keeping the whole body warm, not by wet cloths, but dry ones, especially the back of the neck. Mothers, try it for your little ones. It cannot harm, if it does not cure. I have tried it in the first stages of croup, in my family, and found it gave speedy relief.

A FARMER'S WIFE.

North Hadley, Mass., 1866.

SHOE FOR CORKED OX.

A subscriber from Littleton, N. H., wishes for information relative to shoeing his ox. I had one corked the same way, and had a shoe made tight and drawn out at the toe so as to turn up over the end of the hoof, and then put on so as not to press hard on the toe. It worked very well. I think it best to let his ox lie still a while. I know of nothing better to facilitate the growth of the hoof than a little soft grease of some kind applied often around the hoof, near the hair.

A SUBSCRIBER.

Waterbury, Vt., Nov. 17, 1866.

BIG COLT IN A BAD FIX.

I have a colt five months and twenty-two days old, 14 1-2 hands (58 in.) high, and well-proportioned, that seems to be stiff, weak and lame all over. The cords in his legs are very prominent, and appear contracted, somewhat like the cramp,

with some tendency to crimping down on his forward ankles. There are big puffs, like bog spavins, on the gambrel joints, and at different times seems to limp with each of his legs. He eats and drinks well, and lies down, but gets up with difficulty. He has grown two inches in about four weeks, and has been getting more out of fix each week. There being no farrier in the vicinity, I have done nothing for him, except rub his legs a few times with liniment.

Although a very valuable animal, if all right, I consider his case so hopeless that I have warned him of his early death, unless he gets better very soon.

Can the Editor, or any of the readers of the Farmer, tell me of anything that will be of any practical benefit to him? I have strong faith that Dr. Dadd, or any skilful farrier, could bring him out of it, but I have not the funds nor time to go with him to the city for medical treatment.

"TAKING BACK."

The dam of the above colt is coal black, low built, and weighs about 1050 pounds. Four years ago she was put to "Pegasus," a very dark brown horse, eighteen hands high, and weighing 1600 pounds. Her two succeeding colts resembled herself, but this one is precisely the color of "Pegasus," and *promises* to equal him in height and size, if he can be cured, before I decide to butcher him! I think he is an illustration of Prof. Agassiz's theory of "*Prior impregnation affecting subsequent progeny.*"

Lectum.

HOW TO FEED THE HOG AND WHEN TO KILL HIM.

Please tell "Young Farmer" that the best way to feed his hogs is on corn, two or three weeks before killing, with plenty of water for drink. Kill a few days before the full moon, and just before high tide, and he need not be afraid to look in the pot when cooking, for fear it has shrunk all away.

Forty Years' Experience.

Maine, 1866.

PHOSPHATES AND OTHER FERTILIZERS.

As the long evenings of winter advance upon us, we who have seen the sunshine of spring swell the bud, who have sweated through the haying season, and been rewarded according to our labor, can find time to consider our gains or losses of this year, and make our calculations for the next. That manure which gave the best crops this year, we shall of course use the next.

PHOSPHATES.

I have not quite enough barn-yard and other home-made manure, so I tried "Coe's Superphosphate," on the strength of the high recommendation which several well-known gentlemen, I believe of every State in New England, have given it. My experience is as follows: On one field of corn containing sixty rods, and which received a heavy dressing of barn-yard manure when ploughed, I used for one-third of the rows in planting, "Coe's Superphosphate;" in one-third, hen-manure; and in the other part, soil from the privy. After harvesting, I found that the field had yielded sixty baskets—thirty bushels of sound corn. There was the difference of less than half a basket between the product of the rows planted with night soil and the superphosphate, and that was in favor of the former. The rows planted with hen manure did not yield as well as either of the others, the ears not being so long or so well filled. Therefore I shall, another year, use night soil in the hill instead of superphosphate, because it is as good, and a great deal cheaper. This experiment was on uplands. On a piece of low land, which with horse manure produced forty bushels of carrots last year, I got this year, after applying the superphosphate, thirty-five bushels, with the same care.

I also used it in the hill with potatoes, and applied it to the hill at hoeing. It did well in each case, but not as well as barn-yard manure, which I used in rows alongside of the rows treated with superphosphate. I noticed that the potatoes which I raised with the superphosphate were ripe three weeks before those which were manured with barn-yard manure were fit to dig. This may be a *hint* to me to use the superphosphate when I plant my early potatoes next year. I shall act upon it at all events.

Winter Hill.

Nashua, N. H., Nov. 24, 1866.

CUSHING AND BOYNTON'S MERINO FLOCK.

A recent number of the New Hampshire *Farmer* contains the following account of this well-known flock, which will be read with interest:—

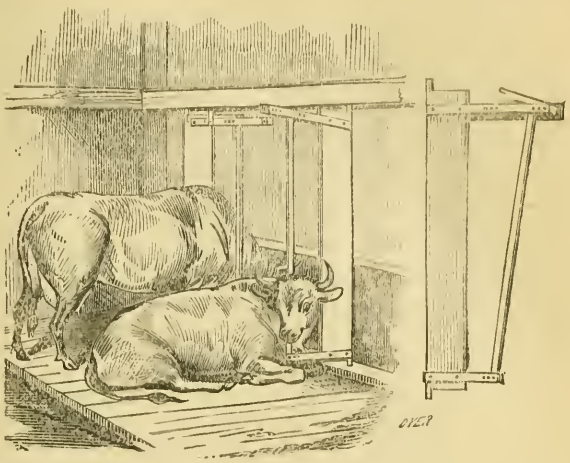
It always affords great pleasure to an admirer of sheep to inspect a flock improved by good breeding and care. He who is a real friend to improvement delights in the evidence of progress seen in the operations of others, and willingly lends his aid and repeats the praise due to enterprise. A visit to the establishment of Messrs. Cushing & Boynton, at Woodstock, Vt., is worth a long journey. The Hon. Nathan Cushing was one of the few farmers who had the intelligence to recognize the superior value of pure blood merinos before their merits were generally appreciated, and the enterprise to act up to his convictions. About twenty-five years ago he purchased twenty pure merino sheep. From that day his progress has been constant. He has taken great pains to gain a perfect physical development, which he regards as the very cornerstone of success. The fleece of great density, soft to the touch, and protected by an abundant secretion of yolk, he thinks of secondary importance, because without the first named quality it is of no value. The extraordinary success which has attended his judicious management is a rich reward for the labor of years. This result is obtained by proper crossing, by good feeding, (every lamb receiving proper care and attention from birth, securing an early, healthful and complete development of all its functions, and this without pampering,) and by a sensible course of treatment, allowing each ewe to nurse her own lamb, and turning off the whole flock to rough it in the pastures through the summer. The great uniformity throughout the flock, now numbering four hundred, and which is surpassed in this respect by no other flock we ever examined, indicates pure blood and good breeding. The present weight of fleeces—10 lbs.—is double the original weight. All the arrangements for winter management are most perfect and systematic. Very high basement rooms, well lighted and ventilated, with plenty of room, divided by feeding racks into apartments for twenty-five

to forty, each opening on a small yard with grain troughs, where the sheep may move about in fine weather, but closed at night, with root cellars in the rear, and mows above filled with such hay as the good farmer loves to place before his stock. We should judge that the granary is not distant. It is noticed that the "Patent Combination Sheep-racks" are not tolerated here. A plain rack, nearly or quite three feet wide and one foot deep, with flat bottom resting on the ground, and upper side boards slanting inward, is of sufficient capacity to hold a substantial feeding of hay, and seems easy for the sheep. The grain trough—two boards, about ten inches in width, nailed together at right angles and resting on legs of three inch joist crossed to fit the sides—is always clean and ready for use.

We missed the genial face of Dr. Boynton, now in Texas with a cargo of sheep, and who would never have trusted his editorial pen to our hands had he imagined it would have been used in a manner so repugnant to his well known modesty.

Prairie Pastures.—Every succeeding year's experience is contradicting the generally conceived idea that prairie land is not well adapted to the production of the tame grasses. Especially is this true of the older grazing portions of Central Illinois. In a recent conversation with an extensive stock grower of Logan county, a former resident of the renowned blue grass region of Kentucky, he affirmed that he could keep more stock on an acre of blue grass pasture upon his present farm than upon any equal amount of land he had ever seen before. It is also a fact, we believe, that the older the pasture becomes, if properly treated, the better the yield of grasses. Blue grass and white clover seem to come into our pastures spontaneously, together with a proportion of other varieties that keeps up a succession of feed. There are some soils of course, here as elsewhere, that do not "set" well to grass.—*Prairie Farmer.*

Storing Roots.—See that they are dry and clean, and that the air can circulate more or less among them. With ruta bagas it is especially important that they should be placed in lattice cases or racks, if in cellars, so that wind from open windows may pass through them except in the coldest weather. The rotting of timbers connected with cellars, often results from imperfect ventilation.—*Country Gentleman.*



SAFFORD'S SWINGING CATTLE STANCHION.

The convenience and security of the old-fashioned stanchion for cattle are acknowledged and prized by farmers; but many, being anxious to give their stock greater freedom, have tried chains, straps, bows, &c.; but seldom with much satisfaction. The simple contrivance illustrated by the above cut, secures all the advantages of the old stanchion, and most of those which belong to separate ties, &c. Properly made, they must be secure and as easily operated by children or others as the old-fashioned permanent stanchions. In case of milch cows, while they can lie down on either side, it is found that, in the swing stanchion made as seen in the cut, they soon acquire the habit of lying upon the side opposite the milker, thus keeping the right side clean. It is the invention and patent of Larkin S. Safford, a practical farmer of Hope, Me. From an examination of a model, we think well of the invention, and wonder it was never thought of before.

For the New England Farmer.

BONE DUST, PLASTER AND SALT.

Having recently seen an editorial invitation to your readers to give their experience with commercial fertilizers, and believing that they ought to do so, I briefly give mine.

I have a triangular piece of land at the Three Corners, near the centre of our village, just opposite to and descending towards the Post Office, which had been mowed eight years, and was broken up last spring and planted to corn and carrots in the following manner:—The south half was manured in the hill with partially decomposed cow manure and Indian

wheat hills; then *on* the hills, after the corn was covered and up two inches, on the first row south was put a spoonful of bone dust; on the second row four spoonfuls of ashes; on the third nothing, and so on, through the south half. My manure being gone we put a spoonful of bone dust *in* the hill in the next row; then four spoonfuls of ashes in each hill next row; third row nothing, and so on, the remainder of the piece. Then, again, after this part was up, the same rows were again treated in the same way.

Throughout the season, as the rows ran towards the Post Office, they were the subject of frequent remark by the farmers meeting at the Post Office, and as the owner of the field was Secretary of the Agricultural Society,—from whose fields good crops were expected,—he had frequent occasion to explain "what makes the difference between the north and south parts of that piece of corn, and what makes every third row so much larger and darker green?" The rows pointed out were in every instance the ones having the ashes, while no difference could possibly be seen between the rows with bone dust and those without anything. That part of the field without any barn yard manure, was not half as large or productive as the other part, and the corn itself was not as early or of as good quality.

There were eight rows of carrots running the same way, which were treated in precisely the same manner, with exactly the same result.

The soil is a dark, loamy slate, resting upon slate and quartz rocks, within from eight inches to two and a half feet from the surface; and being sufficiently dry, though never suffering from drought, except a few square feet of surface in one spot.

I also tried bone dust in a similar manner to some parts of rows of corn and potatoes, and to some fodder corn, without the least perceptible effect, good or bad.

The soil of this field is quite moist for planting land, with some clay. The bone dust or flour of bone, which I used, was from the "Boston Milling and Manufacturing Co." Several others of my neighbors tried a half barrel each, with almost every kind of grain, pulse and vegetables, I should think, from hearing their remarks about it, and on quite a variety of soils, including sandy meadows and hillsides, loam, clay, high and low lands, and in every instance, so far as I can learn, with the same result as I had, with one exception, to wit: Esq. C. told me that he thought that certain rows of corn, to which he applied the bone flour in connection with other manure, were benefited by it; but said he thought "not enough to make it pay." I think there are twenty or more, in this or adjoining towns, who tried it, and I have heard of only one who thinks of trying it again.

I gave some a few times to a cow that was ailing, to advantage I rather think.

Having a strong desire that all facts affecting the farming interests should be made available, I have hastily written the above, though reluctantly, as I do not wish in any manner or degree to injure any man or company. It is quite possible that the climate and soil of this region is not adapted to the use of this fertilizer, while it may be invaluable for other sections.

Plaster

has been tried considerably at different times "hereabouts," but without that great benefi that is manifest from its use in some other sections. Last year I made a trial of

Salt and Plaster,

by mixing together 100 lbs. of plaster to three bushels of salt. On 170 rods of land, sowed to wheat and grass seed, about three bushels and a peck of this compound was sowed three or four days after it was harrowed and rolled. A strip one rod wide was left on which no salt and plaster was sowed. The growth on this strip was smaller and of lighter color through the season. Harvested thirty bushels of excellent wheat to the acre; and this season we cut two good, not extra, crops of hay from the same land; equaling about three tons to the acre of both cuttings.

I also sowed some of the same compound on a strip through the centre of some grass land that I intended to break up the next season, and thought that strip produced about an eighth more grass in consequence. The present season the same was ploughed and planted in such a manner that rows of turnips, corn and potatoes, and a little strip of barley, extended across the strip that was sowed to salt and plaster the season before. The turnips were three times the value there that they were on the same amount of land in any other part of the field. The corn was earlier, darker green, twice the size, and yielded twice the quantity of any other part of the field. The potatoes and barley were also perceptibly larger and better.

I tried some of the same compound instead of manure, in the hill where I planted two kinds of potatoes, and where I planted a few rows of corn, and it proved their ruin.

The present season I sowed four and a half bushels of salt, alone, on one and a half acres of land sowed to wheat and grass seed. The crop of wheat was good where it was not badly lodged, averaging not quite twenty-four bushels to the acre, and an excellent "stalking" or "catch" of grass.

Several of my neighbors have tried salt and plaster, and salt alone, and I believe every one thinks favorably of their use; not as a substitute for barn yard manure, but as a means of increasing it by increasing the amount of food, so that more animals may be kept manufacturing manure of the best quality.

Now, Mr. Editor, as the "ice is broke," just tell other experimenters to "wade in,"

and relate their experience, as plainly if not as bluntly. RUFUS NUTTING.

Randolph, Vt., Nov. 29, 1866.

For the New England Farmer.

SELLING THE FARM---ANOTHER SIDE OF THE STORY.

I was much interested in your remarks about selling the farm; and as it is a question to which I have recently given much thought, I will, with your permission, say something—not about "the other side"—but about another side "of the story."

But I would first say that you give a very good and true account of the advantages that are, or should be, secured on a good farm; and that the importance of these advantages cannot be too strongly impressed on the minds of those discontented farmers who so often complain that they get but little returns from the farm, or that farming is not profitable.

But in regard to selling the farm, do you not go to the other extreme in the comparison you have so well drawn? That there are comparatively few farmers who have passed the better portion of *their* lives on the farm, who would be contented in a crowded city, is undoubtedly true. It would not be natural for men that had been accustomed to active outdoor exercise, to set down with nothing whatever to do; not even a horse to ride around among farmers, to see how their old business prospers. The change would be too great to be conducive to health, pleasure, or satisfaction.

But because a farmer would not be contented with city life, is that a sufficient reason for keeping up the same hard-working farm-life until he drops into his grave, or at least as long as he is able to work? Of course there are many who have sons that take hold and carry on the farm, and provide good comfortable quarters, with a safe horse and easy carriage, for their parents. In such cases, farmers, who are getting old, can probably be as comfortable and contented as anywhere. But I am sorry to say there are some sons who manage, if not calculate, to get all the work they can out of their parents. In such cases the old farmer needs a home by himself. Where the children have all, or about all married off, and got farms, or gone into some other business by themselves, and declining years and failing health make it difficult for the old people to attend to the different kinds of work on the farm, or properly to oversee and attend to the hired help necessary to carry it on,—especially when it is as difficult to find men that can be depended on to work alone without the "boss," or girls that will work in the house without constant oversight, and are so often anything but the quiet, agreeable people, that it is pleasant to have around them,—I say when all this is the case, as it is in many instances in this section, it seems to me it is time to "sell our little farm."

But because it is time to retire from the farm, it does not necessarily follow that he must go into a crowded city. That would be going to the other extreme. But it appears to me that there is a medium course for him to take; that there is a way in which he may enjoy many of the advantages of town life, and still have nearly all of the conveniences and comforts of the farm.

Now I will try to show the kind of life that, it seems to me, would suit and be suitable for such a farmer. He should have a small place of from four to twelve or fifteen acres, according to the location and fertility of the land; the principal object being to have enough to keep a horse and cow, and to raise corn, potatoes, vegetables and fruit for a small family, and also to have enough grain and other feed to make his pork. The amount of land will also be governed by the location and price. If close to a large village, where land is several hundred dollars an acre, from four to six acres will often be enough. Then the cow and horse may be kept on the soiling system altogether, or for the most part, and what more fodder there is needed be supplied by purchase. If away from such towns, where land is cheaper, the place should be large enough to supply plenty of pasturage for a horse and cow during the summer, as well as hay and other feed for winter. But if means will permit, it is very desirable to locate near a village of some size, where there are good churches with able preachers; and where there are opportunities for attending some of the better class of lectures and concerts. It is also very desirable to live near a railroad station; so that it may be convenient to go to neighboring cities or to visit different parts of the country.

Few farmers or their wives, who retire from the farm to pass their declining years in comparative quiet and ease, will want a large house. It is too much labor and trouble to furnish and take care of it. The house should be large enough for the wants of the family, and for the accommodation of such number of guests as the old people will probably wish to entertain. The other buildings should be only such as may be needed for the land and stock.

A course of rotation should be adopted, by which a portion of the land will be planted every year, and another portion seeded down either with or without grain. There will also be a good garden, including a good supply and variety of small fruits; especially of strawberries, raspberries, blackberries and grapes. To attend to this garden, and the corn and potatoes, and other crops grown on the land, and to take care of the horse, cow and pig; and to keep things nice, clean and snug about the buildings and yards, will be about as much as such a farmer ought to do. While, if he is not able to do much hard work, he will hire now and then a few days, to do the hardest

jobs. If there is not enough work to keep him busy all of the time, he may find in visiting, travelling, social intercourse with other men of leisure, and above all in plenty of books and papers, ample means to make the time pass pleasantly and profitably.

Now it seems to me that this gives some idea of another "side of the story," which in reality avoids both extremes. For, in the first place, it does not keep a man tied down to hard work, or burdened with the constant care and trouble of the farm and deprived of all the advantages of town life; nor, in the second place, does it become necessary for him to be shut up in a city and deprived of all of the freedom, comfort and convenience of farm life. He may have the use of his own horse and cow, and make his pork and raise his eggs and chickens. His land will supply all that is usually obtained on the farm, but wheat and fruit, which in most places, for a small family, need not be very expensive. While in selecting and locating on such a place, care will be taken to so arrange financial matters as to have a sufficient income from money at interest, or some other source, to amply provide for all calls in the money line.

Now, in concluding, allow me to ask why many farmers that are getting old, may not have and enjoy such a home? Not those who are able to do all kinds of work on the farm, and that have children who should be brought up to work and trained to make good farmers; but those who, having devoted their best years to industry and economy, now have plenty for their own comfort, and have made reasonable provision for their children. I can see no good reason why such a farmer may not so retire. Is there any one that can? F.

Western New York, Nov., 1866.

For the New England Farmer.

SOILING MILCH COWS.

I am decidedly of the opinion that it pays to soil milch cows through the summer, for I have succeeded in summering twenty cows well, the past season, on a place where seventeen were the most ever kept before, and have made a larger amount of manure than some would have made through the winter from the same stock. I doubled the amount of solid manure by filling the gutter in rear of the cows' stalls, every time the stable is cleaned, with dry muck. This furnishes an abundance of material to grow my green fodder next year.

I would like to know if any one has ever tried milk weed for soiling cows? I am of the opinion that they are much ahead of any other fodder for making milk. Cows eat them eagerly. It is something I have never thought of before this summer. I have gathered a few seeds and shall try the experiment next year.

A great amount of excellent top-dressing is lost by farmers who have no barn cellars, and who take no pains to provide dry material to absorb the urine from their stock. This might be saved in still another way, if those already mentioned are not convenient. Many cannot have cellars without much expense, and would have to haul dry material too far to make it pay. Make holes in the floor in rear of the stock,—or use lattice work,—and put conductors underneath,—half a hollow log would answer,—and conduct it into a cistern, from which it may be pumped to irrigate grass land with small cost and great profit. T. C. N.

Williston, Vt., 1866.

THE WOOLEN TARIFF IN DANGER.

From an article in the *Rural New Yorker*, by Dr. Randall, with the above caption, we copy the following earnest words of caution and advice:—

The woolen tariff of last winter is in very great danger; and the chances are that it will be lost unless the most strenuous exertions are immediately made by its supporters.

What kind of exertions are called for? At the period of the meeting of the National Wool Growers' Association at Cleveland, in November, the impression prevailed that all was safe if we remained united, and that the resolutions passed by that body, and by the State Associations, would be sufficient. *But it is now apparent that they will not be sufficient.* We must *petition* Congress. This was our great weapon last winter. Its effect on the House was most striking. We were present some weeks of the session and know. No easily available form of popular expression comes home so directly and effectively to the representative.

There is not a moment to lose. Mr. Wells' report will soon be before Congress, and Mr. Fessenden's will undoubtedly be commenced, even before a popular expression on the wool tariff can make itself audible. Mr. Fessenden is an experienced and able statesman. If he errs in the premises it is for the want of full information. It is the business of the wool growers and manufacturers of the United States to furnish him that information. The manufacturers are doing so. It is time for the producers to act. Every friend of the wool and woolen interest, in or out of Congress, in Washington, concurs in the imminency of the danger.

To those unused to writing their Congressmen on public matters, we will take the liberty of saying: let your letters be short and nakedly to the point. A distinct expression of individual opinion that as high a rate of duties on wool and woolens as that contained in the bill which passed the House last winter is necessary to ensure a fair and reasonable degree of prosperity to the wool grower—and that such is the opinion and testimony of all experienced growers—is the main thing.

As regards petitions, the mere *form* matters little. Nor is it of the least consequence that

they be *printed* or uniform in their language. Let every friend of the cause immediately *write* a petition and circulate it among his neighbors. Let him give a day or more to canvassing, and then pass it over to some one who will go on with it. Wait not for *long* lists of signers. As soon as a limited neighborhood is canvassed, send on the petition to Congress, though it contains no more than twenty-five or even a less number of names.

To those who prefer not to draw up their own petitions, we present the following form, which can be added to, or subtracted from, at pleasure:—

To the Congress of the United States:

The undersigned, residents of the town of ———, County of ———, State of ———, would respectfully represent to your honorable body that we believe that the tariff bill agreed upon by the joint Committee of Wool Growers and Manufacturers, and which passed the House of Representatives at its last session, was fair towards all other interests and afforded no more than just and equal protection to the woolen interests of the country, and that we therefore pray for its immediate passage into a law.

For the New England Farmer.

BUYING TREES.---NO. 1.

As the season is at hand when farmers are in the habit of laying their plans for the spring planting,—and as a large amount of nursery stock is likely to be contracted for during the coming three months, it may not be useless to give some thought to a matter of so much importance as the purchase of trees. There is no other purchase involving the same amount of money which affects so materially the attractiveness and profit of the farm. A wise selection of fruit trees—if properly set and cared for—will increase the value of the farm greatly beyond the expense incurred at the outset. On the other hand, a stock of puny scrubs, producing second and third rate fruit, is the greatest moth a farm can be cursed with.

A stock of inferior animals will ruin a farmer if he persists in keeping them, but these can be turned over to the butcher with profit, while the cumbersome trees, even for fuel, are hardly worth the cutting.

Dealers in trees are divided into two classes, viz: *Travelling* and *Local*.

By the first class those are understood who go from house to house soliciting orders in behalf of large nurseries at a distance from us.

Some of these are regularly appointed agents of responsible nurserymen, while others, although professing to be such, and carrying the catalogues of well-known houses, take orders upon their own responsibility, and purchase their stock where it can be obtained for the least money. It is from the operations of this latter class that has arisen a general prejudice against New York agents and New York trees.

Although much may be said upon the comparative merits of Eastern and Western trees, it is not safe to infer—from the fact that much inferior stock has been distributed by unscrupulous agents—that trees grown out of New England are any less deserving than those grown here. There are many thrifty pear orchards scattered over our hills and valleys, which furnish conclusive evidence that these trees may do well if properly set and cared for.

If one wants only a few trees, and is applied to by an agent whom he knows personally as an upright and fair dealing man, thoroughly conversant with the subject of fruit growing, and especially, familiar with the success of different sorts in the particular locality in question, quite possibly this may be the best way to purchase. In point of time, at least, it is good economy.

But much evil has resulted from the system of canvassing, which has been extensively carried on during the past ten years.

Wherever an agent has been lacking either in honesty or knowledge of the business the people have suffered. And it must be admitted that many have engaged in the business who had no other qualifications than a smooth tongue and an indomitable energy, not to say impudence.

By the aid of elegant paintings, they have worked up their auditors to a pitch of enthusiasm which has insured large orders. Trees have been sold to those who had not ground suitably prepared for planting, and to those who had neither time or inclination to give them that attentive cultivation which alone will ensure success. Thousands of young trees may be seen in the Eastern part of this State struggling for a feeble existence, choked with grass and briars and broken down by cattle, which only needed proper care to have been a source of pride and profit to their owners, instead of a reproach and a waste.

Paintings of fruit, if faithfully drawn, are not to be despised, for they give the novice a more correct idea of form, size and color, than can be obtained in any other way, except by the examination of actual specimens. But it will not do to forget that if faithfully drawn—and the temptation to exaggerate size and vary colors so as to make trees sell is rather dangerous,—they represent only the most perfect models of their class, and that in an orchard producing large quantities of varieties represented, it is rather probable that there will be some inferior specimens. Again, size, form and color, although important as greatly affecting the sale of fruit, are by no means the only qualities to be considered in making a selection of sorts for an orchard.

For if a pear is fine-grained, rich and melting, it will sell, like the Seckel, in spite of form, size or color. The propensity to keep, the productiveness of the tree and its vigorous growth, must be carefully considered before deciding whether it is a profitable sort to grow.

The agent will be likely to recommend rapid growing sorts, for he, of course, understands

that a large tree is more acceptable than a small one at the same price, and he desires to furnish trees which will not be rejected as being deficient in size. Some sorts do exceedingly well in one locality and fail entirely in another place. A travelling agent cannot be supposed to know what is best for every particular locality.

Other sorts have stood at the head of the list in former years, but latterly have entirely failed; and yet nurserymen continue to grow them because they are trees easily produced, and their former prestige enables them to dispose of many trees to the uninitiated.

The White Doyenne pear is a remarkable instance of this sort. Hear what Downing said of it: "The White Doyenne is unquestionably one of the most perfect of autumn pears. Its universal popularity is attested by the great number of names by which it is known in various parts of the world." This was true when Downing wrote it (twenty-seven years ago,) but who would think of planting the White Doyenne in New England now? And yet, thousands of trees of this sort are palmed off upon the unsuspecting every year under some one of its twenty-nine names mentioned by Downing. G. A. A.

Worcester, Mass., 1866.

Be Tidy.—Everybody detests slatterns in the household. But slovenliness in the out-door management of the farm is equally disgusting to the lover of neatness and good order. In the spring and summer, nature with its myriad beauties of growth and color seems to struggle to conceal the short comings of the shiftless farmer, but the frosts of autumn reveal them in all their unsightliness. Fields smothered with tall, gaunt weeds, sowing their millions of seeds for future crops; fences in a tumble down condition, yards torn up by swine, walks to house and outhouses knee deep with mud, corn wasting in fields, grain stacks the styes and playhouses of hogs, valuable machinery bleaching, swelling, rotting in the weather, or roofless sheds, are some of the signs of the out-door sloven. Reader, have you any of these signs existing around you?—*Prairie Farmer.*

Remedy for Choked Cattle.—Take a small parcel of gunpowder about two or three thimbles full—make a small funnel with thin paper sufficient only to hold the powder; close the large end by folding—insert it in the passage of the throat either with the fingers or hand, or by using a small stick—split so as to grasp the small end of the funnel, and to be easily withdrawn when desired. Nothing else to be done. This has been tried successfully by some of the best stock raisers in this vicinity, and has never failed, I believe, in any case.—*J. S. U. in Co. Gent.*

SHEEP LABELS.

Here is a very simple contrivance not only for marking, but for registering a flock of sheep. It reminds us of the little labels with which printers mark and register the names of their subscribers. And if farmers find the sheep tag as useful to them as printers find the newspaper label, it must be universally adopted.

The sheep labels are made of tin-washed metallic strips, which are stamped on one side with numbers from 1 up to 1000, and with name or initials on the other side, as may be ordered. It is attached to the sheep by inserting it through a slit punched in the ear. The inventor, Mr. C. H. Dana, of West Lebanon, N. H., furnishes properly ruled books or sheets, got up especially to accompany these labels, which furnish facilities never before attained for keeping a record of each individual sheep of the flock. The numbers on the labels correspond with those in the book, which is ruled with headings under which to note the age, pedigree, weight of fleece, and various other items which one who wishes to improve his flock would naturally desire to record. The labels printed with number and full name, if not over nine letters, are furnished for $3 00 per 100; punches, $1 25; bound registers, 50c. It is claimed that they are more reliable, more convenient and cheaper than any other plan of marking sheep, as the tags will last for years. They are recommended by many of the well known wool-growers of Vermont, New York, and other States.

MAKING BUTTER IN WINTER.

MANY families keep two or three cows, and depend upon them for a supply of butter through the year. In large dairies, also, there are always cows coming in late that give milk thro' the winter, which must be made into butter, or lost, as there is no sale for the milk in districts remote from large villages or towns.

A dairyman in Vermont informs us that he is entirely successful in making butter in the summer, but finds the process a difficult one in the winter; indeed, he says he frequently fails to get good butter in winter churning.

As we rarely have any trouble in getting excellent butter between the first of November and the first of May, and as several inquiries have been made as to the process pursued in making it, we give below a twenty years' practice of the

Rules of Making Excellent Winter Butter.

1. Good cows and *clean* milk. The milk should have no taint of the stall. All pure cream may be alike, but all cows do not give the same amount of cream in the same amount of milk. Both quantity and quality of milk are affected by the *breed*. A *Devon* cow has been known to yield *one* pound of butter from 9¾ quarts of milk; an *Ayrshire* cow from 9½ quarts, and an *Alderney* cow from four quarts. So "the individual *form* and *constitution* of the cow cause both the yield and richness of the milk to vary much." Its *quantity* depends upon the distance from the time of calving, and its *quality* upon the nature of the soil in which the plants grow upon which the cows feed. It is richer in cows that are in *good condition*, and in dry seasons.

2 Strain the milk so that it will stand from two to three inches in depth. No absolute tests have been made on this point. A few trials will satisfy any one whether a greater or less depth would be better.

3. *Temperature.* This is the test and touchstone in butter-making. Without a strict regard to temperature, the observance of all the other rules will be of little consequence. The milk should stand in a perfectly clean, airy place, and where the temperature will remain, evenly, at about 60° Fahrenheit. Where a cellar affords that degree of warmth, and is free from dust, it will be an excellent place. If this is not at hand, some pantry, or closet, in the centre of the house, where it will get warmth from the chimney, and is not suddenly affected by external variations, will be found favorable.

4. In an even temperature of about 60°, the cream will usually rise in from 36 to 48 hours. If a lower temperature prevails a part of the time, it will take longer. A little close observation will show when the milk ought to be skimmed, without regard to time. On pushing the cream a little from the side of the pan the milk may be plainly seen. If it looks blue and thin, it is time to take the cream. If white and thick, it is evidence that the cream has not all risen.

Every time the pans are skimmed, a little salt should be thrown into the pot with the cream, and the whole stirred together. If this is not done, the milk,—which it is impossible to prevent going into the pot with the cream,—will separate from the cream, turn bitter, and spoil the whole. This is quite often the cause of bad butter. When the cream is turned into the churn it should be all alike—a homogeneous mass; no whey found at the bottom of the pot. So if a single pan stands too long, until the milk turns bitter and taints the cream, that will in turn taint all that is mingled with it.

5. Keep the cream where the milk is kept, and at the same temperature.

6. Churn often. Where dairying is a business, the rule is to churn every morning. In a small way, we cannot do so, perhaps not oftener than once a week, but where the cream is salted and kept as stated in rule 4, it will be sweet at the end of seven days. Still we should advise churning whenever there is cream for six or eight pounds of butter.

7. In churning, *bring everything to the same temperature*, about 62°—cream, churn, and

dasher. If there is no thermometer at hand, exercise your judgment, and there will soon be no need of a thermometer. We never use one, now. If the weather is very cold bring the churn into the kitchen over night, so that it may be warmed through. Before using it, pour in boiling water and let it touch every part of the inside; turn it out, and rinse with cold water. Put the cream into the churn and add a little warm sweet milk.

8. Churn steadily and moderately, and the butter will usually come within twenty-five minutes. When it is brought together, add just water enough to wash off the buttermilk. Have a wooden tray and a wooden spoon at hand; scald them, rinse with cold water, place the butter in the tray and work it over with the spoon. Add a common tablespoonful of salt to each pound of butter. Work over till the buttermilk is apparently all out. When this is completed, set it away until the next morning in a place as warm as where the cream was collected. If in a cooler place it will be likely to become so hard that it will be difficult to handle. Work out the remaining buttermilk, and make it into lumps or pack down in tubs.

Such are the rules observed in our kitchen, by the mistress of the house, for more than twenty years, and with uniform excellent results. The butter made is not merely sweet, but has that delicious *butter aroma* that nothing can imitate. It is never white, no matter how cold the weather, nor of a dark yellow, but of a beautiful straw color. It is firm in texture, fine grained, and keeps well, when there are not too many buckwheats about!

Only *ten* pounds of butter in each 100 that comes into Boston market, are fit for the table,—we are informed by the largest butter dealers. Of course, the price must be governed by the quality. What an immense loss this must be annually, to the producers. They do not probably get more than one-half as much as they would if their butter was good. It is just as easy to make good butter, as poor, when a system is once established. It is certainly poor policy to go through so much labor, and use up so much material, and only get *half pay* for it.

A proposal has been made to fertilize the Great Desert of Sahara, by complicated systems of river irrigation.

EXTRACTS AND REPLIES.

Office of State Board of Agriculture, Lansing, Mich., Dec. 12, 1866.

Editors of the New England Farmer:—

In your remarks preceding the communication of President Abbott, relating to the Michigan State Agricultural College, in your issue of 8th inst., you say you "are glad to see a more favorable account of this pioneer institution than that presented by the President and Secretary of the Board of Agriculture."

Please state in your next paper, to what statement of the President and Secretary of the Board Agriculture you allude.

Respectfully, Sanford Howard,
Sec. of the Michigan State Board of Agriculture.

Remarks.—In the course of an article on Agricultural Colleges in the Farmer of Oct. 27th, the following paragraph occurs:

"In Michigan, at the last session of its legislature, the President and the Secretary of the *State Agricultural Society*, presented a petition asking that the Agricultural College at Lansing, the Capital of the State, which had been in operation for several years, be removed to some more favorable locality, on the ground that where it was, and as it was and had been, it was practically a failure, being open only during the summer months, and with a very thin attendance even then."

In introducing a note from the President of the Michigan Agricultural College, correcting this statement, we said:

"We are glad, however, to see a more favorable account of this pioneer institution than that furnished by the statement of the President and Secretary of the Board of Agriculture, *on which our remark was based.*"

These two extracts, thus placed together, show that the expression "Board of Agriculture," was unfortunately used for State Agricultural Society. At the time of writing that sentence we were not aware of the distinction between the two associations.

We have upon our shelves an imperfect series of volumes entitled "Transactions of the Michigan State Agricultural Society," compiled by its Secretary, and also some later volumes, entitled "Annual Report of the Secretary of the State Board of Agriculture of the State of Michigan." These volumes are used mainly for reference; and we have looked upon the later volumes, edited by Mr. Howard, as a continuation of the old "Transactions," and upon him as a successor of previous Secretaries and editors. But we now learn that the two associations are distinct, and it appears not entirely harmonious. The "Board of Agriculture" is a State Board—at the head of which is the Governor—and has charge of the college. It also makes an annual report, including abstracts of the returns of county agricultural societies.

The State Agricultural Society is another body, having no necessary existence by law, and not having charge of the college. It was the President and Secretary of this Society who signed the petition to which we referred.

That this document, addressed "To the Honorable, the Senate and House of Representatives of

the State of Michigan," and assuming to be the "Memorial of the State Agricultural Society," justified our statement, we think will be seen by the following extracts from it:

"The agricultural college was opened in 1857, and has been in operation for eight years. During that time it has cost the State an aggregate of $168,320. * * * Taking the average attendance of students to be 50, which, as nearly as could be learned by inquiry from students and professors, seems to have been the maximum average for the past five years, and the cost for each student per year, so far, has been $346.40. * * No winter term has been established at the college, yet it is well known to every farmer of Michigan that the winter management of the farm is of fully as much importance as that of the summer and autumn months."

This document was presented to the legislature of Michigan at its session two years ago. We are now informed that it met with so little favor that it elicited no debate, and was not even reported upon.

We might have answered Mr. Howard's inquiry in fewer words, but as the Memorial alluded to was printed in the newspapers of the State, and as the relations of that Society with the present Board of Agriculture may be misapprehended by others, as it was by ourselves, we have thought the foregoing remarks but simple justice to the College and to the Board.

Admitting these two-year-old objections to have been all true—"that the institution was a mistake from the beginning," that it "was located wrong," that it "has been badly managed," that it "has been an expensive concern"—may we not say, in the language of Gov. Crapo, in a late address at the college, "that its officers and professors are entitled to all the greater credit and all the more praise, for securing, under so much discouragement, that degree of success which is apparent here even to the casual observer; and claim of us, and are entitled to receive at our hands, a proper and just recognition of their valuable services, and the fidelity with which they have been rendered." If two years ago the college was a failure," and this year the rooms are so crowded that, as President Abbot says, thirty-four applicants had to be turned away, the success is all the more creditable to the present managers of the institution.

RYE FOR FATTENING.

Many people consider rye good for nothing except for making whiskey, but having used it several years for horse feed, and knowing its value for that purpose, I concluded to try it for feeding my pig. I took a small cask with one head out, and filled it about half full of dish-water, say two to three pailfuls, and put rye meal enough into it to make it as thick as would dip easily, replenishing it from day to day, and throwing in what sour milk we had from one cow, after using all the milk we needed for a large family. Of course the pig had but little. I fed with this until the pig was more than six months old, then I gave some corn meal, but mostly small ears of corn. Killed at 8 months old, and it weighed 241 pounds—the cheapest pork I ever raised. I kept the pig in a close pen. She ate well all the time—never lost a meal, I think. L. VARNEY.

Bloomfield, C. W., 12th Mo., 10th, 1866.

THE HUSE METHOD OF CURING MEAT.

At this season of the year hardly a newspaper of any kind can be seen without some one of the thousand and one receipts for preserving pork, beef, ham, &c.,—each and all aiming at the same result, varying in ingredients or proportions—all more or less complicated or difficult of practical application, at the first, and requiring more or less scalding over of the pickle or brine, and considerable pecuniary expense.

As I am one of those who are "in for" the thing that is best, all things considered, although it may be as simple as the medicine that cured Naaman, I enclose the following, which has never been published, that I know of, but once, although it has been in constant use hereabouts for twenty years or more:

Pack in alternate layers of salt and beef, in a clean barrel; put no brine nor water,—no molasses, saleratus, saltpetre, pepper, mustard or other stuff in with it. The liquid required will come out of the meat. After the weather becomes warm, if any collection of froth, white scum, &c., commences on top of the liquid, don't think it is "spoiling" and "must be scalded over," but just fling around over the top a few handfuls of fine salt, and the scum will soon be gone. I suppose it would have the same effect if the brine could be stirred up from the bottom, but it cannot be, conveniently, so a little more salt is required. Why it is so I am not positive, but think it may be on account of the saline property having partially separated and settled from the surface.

There is brine in this region that is all the way from one to twenty-five or thirty years old, that is as sweet as the first year, and has never been scalded at all, and in which there has always been meat—nothing having been done to it but an occasional sprinkling of fine salt.

After using it one year, when a new stock of meat is to be put down, empty the old brine into another vessel, rinse out the barrel and put down the meat as before, and pour back a part of the old brine, and put the rest by for bathing sprained limbs, &c., or reduce it somewhat and use it for manure. When the old brine is poured back, or used for new meat, of course but little new salt is required, only as scum is seen to collect on the surface.

In this way beef is kept as sweet and red as new, the "year round," and there need be no anxiety about tainted meat, or "scalding over the brine."

For hams there is no way so good, I think as to pickle them thus for six weeks, then take them out, dry them, sew them up in bags and pack them in sawdust.

We have tried this method in our family practically for two years, and having just put down another year's stock of meat, I can testify that the brine is perfectly sweet. We never had meat kept so well by any other method. R. NUTTING.

Randolph, Vt., Dec. 10, 1866.

REMARKS.—The old adage that "sauce for the goose is sauce for the gander," hardly applies to curing meat. The process which is successful and satisfactory in one case may fail in another. If the animal is worried, fatigued and in a feverish state, decomposition of the meat is much more rapid than if slaughtered when quiet, healthy and ready to "lick the hand just raised to shed its blood." The condition of the meat as affected by various causes after being slaughtered, the season of the

year, and the state of the atmosphere, are some of the many conditions which experienced packers find necessary to take into consideration. Few of the "boys" who uttered hard words about the "salt horse" of their rations, were probably aware of the difficulty of preserving beef, especially for warm climates, so as to retain the good taste and nutritive value of beef the "year round," and yet avoid the danger of "tainted meat." A man may grow old in the packing business and still desire to learn; indeed, we believe that the most experienced are the least positive. In curing pork we have adopted the course recommended by our correspondent, but in preserving beef we have generally used a pickle, fearing that a "layer of salt and a layer of beef" would turn out the beef a little too much "corned."

TREATMENT OF A SICK COLT.

I notice in your paper of Dec. 15, an inquiry of Lectum in regard to his colt. I will give him my views of the treatment for such a case. Take the inside of white oak bark and steep it until it is quite strong. Let it cool; then add four tablespoonfuls of good brandy, one teaspoontul of fine salt, the white of one egg, to each quart of the liquid. Shake well together. Make two applications a day, rubbing well with the hand. Give him a roomy stable, well bedded on the ground. Do not tie him, but exercise every day. Feed on dry oats, or if ground, feed it dry, with good clean clover hay. A. L. T.

Fitchburg, Dec. 17, 1866.

HOUSE FLIES.

It is a long time since I have written for the FARMER. I have had, however, a lot of articles in my mind, but have been so busy with "de shobel and de hoe" that there has been no time for the pen. But an earnest call for light on the origin of flies, in the FARMER of December 8th, prompts me to take mine out from "under the bushel." Flies are propagated in the summer in the compost heap principally—mostly in horse manure. They delight in the fresh droppings of the horse, penetrating quickly into its loose texture, and depositing a great number of eggs which hatch in a few hours; varying according to warmth of weather, and degree of heat of compost. In from four to seven days the maggot comes to maturity, creeps to the side of the heap, and takes the chrysalis form. It then appears like a small egg, and is of a dark brick color. In about two days more, the perfect fly appears, works his wings a little, to get the "hang" of his new existence, and then flies directly into your house, dear inquirer, and alights on your nice food. After wiping his feet and luxuriating on your good things for a time, it goes back to the barn to increase and multiply. Having learned so much by observation, we put our knowledge to practical use by letting the droppings of the horse remain in the stable in summer about six days, presenting great attractions to the flies that escape me and those of my neighbors. They will soon produce countless thousands of maggots. We then heat about six pails of scalding water, and while one rakes over the heap another dashes on the water, which literally straightens them out. Pitching the scalded mass into the pig pen we permit the process to be repeated. It is not a particularly pleasant operation, but far better than to fight them after they are in the house. The women will be glad to heat the water if the men will apply it, and both will be pleased with the success of the plan, if well followed up. Hereafter we hope to bring up the subject of horse flies.

TIGHT BARNS.

We see that Mr. J. W. Brown brings up this subject again. All appear to overlook one thing, viz.: the fact that a small body of hay will not keep, no matter how made, in any barn, while a large lot of hay, rapidly got in and thoroughly stowed, will keep good either in a tight or an open barn. If air can have the least circulation through hay it will spoil; if it cannot penetrate, it will spoil a little on the outside, and the rest will remain good. It wants a very large mow to keep coarse hay, for it is very hard to prevent coarse kinds of fodder from becoming musty, for the reason that we cannot get it close enough. Should like to give my experience in detail, but must close. CALEB BATES.

Kingston, Mass., Dec. 11, 1866.

For the New England Farmer.

RENTING FARMS.

Although the practice of renting farms is sadly in disrepute in this country, there are important advantages to be derived from a wise system of farm tenancy; and could such a system be made popular, our agricultural interest would be promoted thereby. I would not for a moment, advocate that men should never own the land they till, as in many parts of Europe, which is but the natural result of a land monopoly. But here we are going to the other extreme, and ownership is regarded as necessary to success. Such is the ambitious spirit to possess land for one's self, and the ease with which it can be gratified amid our liberal institutions, that young men rather scorn the idea of beginning upon hired farms; it does not accord with a prevailing notion of independence. And it is difficult to find tenants who will occupy leased land for any length of time, or treat it fairly when so occupied. A more popular way is to run into debt for a farm at the outset, and exercise the rights of proprietor at all hazards. Consequently a heavy burden is assumed at a critical period of life. I say critical, for success depends partly upon the manner a man begins. All fair sailing may not be desirable, but frequently heavier burdens are assumed by the active and ambitious, than can be well sustained, and they either break down or struggle until a large share of the courage and enterprise of early manhood is lost, and they never attain that success they could have reached under more favorable circumstances. This mode of beginning is a fruitful source of much of our poor farming.

The same principle carried into trade or manufacturing would be attended with similar difficulties, but mechanics and merchants are generally content to hire a store, or shop, and power, until they have established themselves in business and have a surplus of capital. To divide their capital at commencing between stock in trade and purchasing real estate only weakens their credit,—cripples and embarrasses their operations. Successful copartnerships are formed by one party furnishing capi-

tal and the other experience or knowledge of business. So, too, men beginning farming with little or no capital will find advantages in hiring a farm until they have acquired sufficient means to purchase. That success does not depend upon ownership, may be proved by the examples of many thousand thrifty and eminent farmers in Great Britain, who never owned a rod of the land cultivated. It is true, all one may desire cannot be found upon a hired farm, and it is equally true that a small capital cannot command a place, by purchase, that at once comes up to our wishes. Again, some think they cannot reap the full benefit of their labors and improvements upon a hired farm, as well as if they owned it. To this objection it may be asked, how fast are improvements made upon farms bought upon credit for the first five or ten years. Are the majority of places under heavy incumbrances, treated better than rented land ought to be, and as tenants can afford to when they hire for a series of years? Men of limited means are not expected to accomplish much beyond making the farm hold its own, though some by extra hard labor will show a yearly progress. Capital is necessary for rapid improvement, and to make the care and labor easy. And where shall men of limited means find a sufficiency? Disinterested parties are slow to loan to farmers. Only those who have an interest in the land equivalent to ownership, will lend it freely. By becoming tenants they can command more capital, than if they bought land; for, practically, a copartnership is formed—the owner furnishes land, buildings, &c., and is a silent partner, while tenants furnish knowledge and working capital. And as the combination or union of men and capital accomplishes greater results in trade, commerce and manufacturing, so it can in farming. The rapid progress of agriculture in England may be accounted for upon this principle of co-operation and employment of a large amount of capital. Tenants having no land to pay for, their yearly gains go to increase that essential item, their working capital; and when the benefit of any invention or measure—as under-draining—are ascertained, the land owners come forward with their influence and capital for its immediate adoption; thus any great improvement is adopted quicker than if every man owned his farm and acted single-handed. It cannot be said American land owners are so indifferent to their interests that they will not rightly consider and aid in any improvement tenants may make, or desire to make. As a general rule, our land owners are disposed to act more favorably towards tenants than tenants are towards the land. Many a farm is sold which the proprietor would gladly have retained in his name, provided he could have leased it, and not have it run down. Good farms can be hired in every town by responsible parties.

The great difficulty with those who hire farms here, is, that they hire for too short periods; they do not remain on a place long enough to feel at home, or to adopt a remunerative system. Where a farm is taken for a term of years, a course can be pursued that benefits both parties. Tenants, by using all their means as working capital, and increasing it by their yearly gains, can, in reality, be larger farmers and more independent, than if they were struggling to pay for their land. With the aid of the proprietor to push forward rapidly any improvements, to help sustain losses arising from the vicissitudes of the seasons, or accidents, their cares will be materially lessened and labors lightened. When they will remain five or ten years, or until they have acquired experience or sufficient capital to purchase, the probabilities are that, at the end of the second five or ten years, they will be richer men, better farmers, and show fewer marks of overwork, vexation, and care, than if they had run deep into debt for a farm at the outset.

The remark is often heard, "I would like to be a farmer if I had the capital to make it easy." To buy a farm on credit and pay for it from the hard earned profits, at the same time make improvements, support and educate an increasing family, is indeed a formidable task. Many would-be-good farmers turn their attention to other employments. Others never relinquish the idea of farming, but take the roundabout way of first earning their farm at some trade or in business. To all men who do not inherit a farm, hiring opens an easy way to begin at once. Young men can begin for themselves earlier in life, or just as soon as they are competent to manage one. Where there is fair dealing between land owners and tenants, they sacrifice no rights or labor, nor compromise any feeling of true independence, but have all the advantages of a just union of their talents and labor with capital.

Remarks.—To all persons who are not acquainted with farming as an employment—to young men, especially—we recommend the reading of the foregoing article. Our constant reply to applications for advice has been, for many years not to *purchase* a farm at the outset,—but to become a tenant, or a hired-hand, for one or two years, in preference. The reasoning above is sound and judicious, and we have no doubt will decide the question, *Shall I purchase a farm?* in the negative, with a good many persons.

Making Roads.—Drain them. There cannot be a good road where water stands by the side of or on it. Keep out stones of every size, and have the top of the road evenly and slightly rounded.

AN APPLE FOR A NAME.

The above cut was drawn and engraved for the NEW ENGLAND FARMER from a beautiful specimen of some superior apples grown in Concord, Mass., by William W. Wheildon, Esq., and supposed to be the Nyack Pippin. Further investigation convinced Mr. Wheildon that he was mistaken as to the name. The artist has succeeded in producing a capital likeness of the fruit, and its reproduction in our columns may lead to the recovery of the correct nomenclature.

NEW PUBLICATIONS.

TRANSACTIONS of the National Association of Wool Manufacturers. 1865–1866. Boston: Press of John Wilson & Son. 1866.

Such is the title page of a bound volume, for which we are indebted to John L. Hayes, Esq., Secretary of the Association. It comprises nine pamphlets, which have been published during the past year, amounting to 325 pages, among which is Mr. Hay's valuable dissertation, entitled "The Fleece and the Loom," extracts from which have been extensively published by the agricultural papers of the country; a Report of the Convention of Wool-growers, and Wool-manufacturers held at Syracuse, N. Y., Dec., 1865; the Joint Report of the Executive Committee of these bodies to the United States Revenue Commission, February 9, 1866, and their statement relative to proposed duties on wools and woolens, addressed to same commission, May, 1866; together with interesting facts relative to carpet, knit goods, and worsted manufacture, &c., &c. Whatever may be the opinion of wool-growers as to the effect of the operations of this organization of wool-manufacturers, either separately or in conjunction with themselves, this volume is conclusive evidence of ability and industry which all must respect and admire.

—A nice flower garden is the cheapest and most attractive ornament any dwelling, whether in town or country, can possibly have.

THE WOOL TARIFF.

The Washington correspondents of the daily papers have, of late, alluded to rumors of the probability that the duties agreed upon by the Committee of Wool-growers and Manufacturers, and which passed the House at the last session, were about to meet with unexpected opposition. The facts, however, that imported wool is now used by very many of the woolen mills in New England, while farmers are seeking in vain for a market for one or more clips from their own flocks, are so well known and so indisputably show the need of the proposed legislation that we have paid little attention to these vague reports, which we are sorry to find confirmed by the correspondent of the Boston *Daily Advertiser*. This writer in his letter of December 27th, says: "The new tariff of Mr. Wells, as a substitute for the House bill, arrived here to-day. Only three copies are out. Enough is known of the bill to make it certain that it opposes the system of protection agreed upon by the House, and embodies the views of the opponents of that legislation. It in effect re-enacts the present rates of duty, though an advance is proposed on many articles and a decrease on quite a number. The free list is materially increased. The bill is accompanied by a long report, in which he discusses the ills which the industry and business of the country languish under, and gives his reasons for administering substantially a free-trade tariff as the remedy for them. His main idea is that the inflation of the currency is the real enemy of our prosperity, and that before we can manufacture successfully we must return to specie payments. He takes the ground that what he calls our cumulative system of protective duties is ruinous to our industries; that, with resumption of specie payments, no protection would be needed upon the leading articles of wool, coal, and pig iron; that the only interests which need protection are those whose products are fine and require skilled labor and large capital; that if Iowa, Kansas and Texas can grow wool at a profit, Ohio and New England have no right to complain; that the revenue taxes on depressed or exposed industries should be lightened or taken off; that the condition of our currency and the suffering state of our manufactures are unfavorable to any sudden modification of the tariff."

We hope that the document when submitted to Congress will be found not to justify the above unfavorable impressions. But from a late statement by the New York *Evening Post*, a free trade advocate, in relation to the character of Mr. Well's tariff bill, we fear that there is too much truth in these rumors.

FARM IMPLEMENTS.

It would be poor policy for a man in these times to use a wooden shovel, shod with strips of iron, as the farmers did forty years ago.

It would be a similar policy for a man of business to go on foot fifty miles, when he might take the cars.

It would be poor policy for him to use a hoe weighing a pound *too much*, or a worn-out plow that would turn the soil imperfectly only four inches, when it ought to be plowed ten inches deep.

It is poor policy to use any machine or implement that will not accomplish more than half the work that a *good one would*, with the same amount of time and labor.

It would be poor policy to use hay or dung forks, hand-rakes, spades, shovels, axes, or wheelbarrows, as they were made and used forty years ago. And yet some of them may occasionally be found on New England farms at this day. Extra time and labor enough have undoubtedly been spent upon them to purchase new ones two or three times over. Mr. William D. Brown, in a report to the Middlesex Agricultural Society, says:—

"As farmers want a good many tools, and don't generally buy them until they *see* them, would it not be a capital plan to advertise new and improved implements by *showing them up at cattle shows?* The committee firmly believe that manufacturers and dealers will consult their true interests by arranging a good display of their articles, annually, before such a crowd of interested customers. We recommend, too, to farmers to buy more and better tools. It would be a mercy to many a sweating cultivator in our county, to have half his tools stolen! Money is thrown away by handfuls by using up inferior tools. Teams are kept dragging plows, pointless, with cutters worn half way up to the beam. Too much carting is done in clumsy, hard-running carts. A stone and a draft-chain are still in use, too generally, in place of a good "sword" to tilt the cart. The committee know of one new farmer who has, the past season, carted his

manure in a wagon, having tediously to shovel out the whole load. He wisely lost no time, as did the Irishman who was greatly perplexed with the "four-wheeled cart," in shouting at his horse's head, "rear up, there, you rascal! rear up, there!"

NEW HORTICULTURAL MAGAZINE.

Commencing with the year, Messrs. Tilton & Co., of Boston, issue a new magazine of horticulture with the title of "*American Journal of Horticulture, and Florist's Companion.*" Fruit, flowers and vegetables are the three branches of culture to which the work is to be specially devoted; treating severally of the garden, the forcing and cold house, the orchid-house and stove, window gardening, care of house plants, pomology in its many branches, entomology and ornithology, as connected with horticulture, &c. Our country presents an open and inviting field for a work of its proposed high character, and an examination of the first number encourages the hope that this want is now to be supplied. It contains articles from Francis Parkman, J. M. Merrick, Jr., Hammatt Billings, John Lewis Russell, E. S. Rand, Jr., William C. Stone, J. F. C. Hyde, E. A. Samuels, and selections from the English Journal of Horticulture, Revue Horticole, Scottish Gardener, &c. It is neatly printed and illustrated. The subscription price is $3.

There is one feature in the plan of this magazine which we should be glad to see imitated by the agricultural press. We allude to the publication of illustrated biographies of distinguished horticulturists.

PAPER MILLS.

In the United States there are 750 paper mills in active operation. They produce 27,000,000 pounds of paper, which, at an average of ten cents per pound, would be worth $27,000. As it requires about a pound and one-half of rags to make one pound of paper, there are consumed by these mills 400,000,000 pounds of rags in a single year. If we estimate the rags to cost four cents per pound, there would be a profit of $11,000,000 in this branch of manufacturing.—*North West.*

Remarks.—The paper-makers have been reaping a most abundant harvest for several years past. Paper is too high. These high prices operate as a tax upon education. They greatly abridge the circulation of books, newspapers and letter-writing. Excellent paper may be made from a large variety of substances. From straw, corn-husks, or almost any weed or substance that is of a fibrous nature. *We* have manufactured a pulp, in a limited way, from the common bass-wood of the country, which paper-makers pronounce a most excellent article. There is no doubt on our mind that the judicious employment of a capital of $10,000 would produce a similar pulp, in any quantity, at a cost of *four* cents per pound, in a dry state. It is now done in Europe, in more than one hundred instances! The process is extremely simple, requiring no *chemicals* or bleaching of any kind.

The *California Farmer* suggests that their "Tule Grass" must be a good article, and states that paper is now being manufactured from *sedge grass*, which is very white and clear, and is so good as to serve as a substitute for ordinary cap or writing papers made of cotton or linen rags.

There is scarcely any branch of industry in the arts that requires change and progress, so much as the art of paper-making. It is too costly. It ought to be sold at less than one-half its present price.

Michigan Agricultural College.—We have received a catalogue of this institution for 1866. The names of 47 students in the regular course are given. Senior class 2, Junior 5, Sophomore 12, Freshman 28. There are also 51 in the Preparatory Class and 10 in the Select Course. Total 108. In addition to the usual college facilities, this institution has the following means of illustration: a farm of 676 acres, of which about 300 are under cultivation; botanical gardens of trees, shrubs and herbaceous plants; vegetable gardens, small fruit garden, apple orchard, pear orchard, general lawn and grounds; Galloway, Ayrshire, Devon and Short Horn Cattle; Essex and Suffolk Swine; Southdown, Cotswold, Spanish Merino, and black-faced Highland Sheep, &c.

—Alexander Dale, Allegan, Michigan, recommends, and Dr. Snodgrass of the New York Farmers' Club, endorses the recommendation, of a poultice of stewed pumpkin, renewed every fifteen minutes, for inflammatory rheumatism.

—A correspondent of the *Prairie Farmer* who kept a dairy, *knows* it to be a fact that if his cows were not salted as often as every fourth day they would fall off in their milk from a pint to a quart per day.

EXTRACTS AND REPLIES.

JOTTINGS FROM MAINE.

DEAR FARMER:—Though it has been some time since I have sent you any of my jottings, you have not been forgotten; but as there did not seem to be any particularly important occurrence to note, I have forborne to intrude upon your crowded columns. Now, however, that it is so near to the time of your promised expansion, and the appearance of that much-missed Monthly, which I hope soon to greet, I send a few items, for remembrance sake, till more room is allowed.

We have had open weather most of the time till far into December, with much rain through November, so that the fountains of water are well filled for winter use. Farmers have had time to do everything they wanted to do, in one sense, and are anxious for snow. There have been two or three little flurries only, till to-day it is a real North Wester, beginning in the night. The ground is frozen, so now it appears as though the

"Woodman's axe lies low"

no more for the want of snow. It has been very favorable for hay. Sheep, which we are quite well stocked with, have been fed but little, not so much as they ought to have been for their and their owners' good, which has made quite a difference in the amount of barn fodder used, up to date.

O. W. TRUE.

Farmington, Me., Dec. 17, 1866.

CRANBERRIES.—FILM ON AN OX'S EYE.

I have a meadow where I want to raise cranberries. Will somebody tell me how to prepare it, and how to set and tend them. The land can be drained so as to be quite dry. Is there any simple way to take a film from an ox's eye? E. E. A.

Sunderland, Mass., Dec. 21, 1866.

REMARKS.—Will some practical cultivator of cranberries furnish the desired information for "E. E. A.," and for such other readers of the FARMER as may be thinking of raising this profitable fruit?

In relation to the removal of the film from an ox's eye, we find the following recommendation in the *Tribune*, as read before the New York Farmers' Club:

"A. Burroughs, Dartford, Greenlake Co., Wis., says he never fails to take the film from the eyes of cattle or horses by the following process: melt a piece of fresh butter, the size of a hen's egg; take the animal by the horn and nose; turn the head so the ear opposite the eye affected is up; turn the butter into the ear, not the eye, being careful not to have it burn; wait four or five days, repeat the dose. The third time has always been sufficient."

We print this as a specimen of the barbarous methods which are sometimes resorted to in the treatment of cattle diseases. The film is a singular manifestation or result of disease,—generally of inflammation. "The horse," say the books, "has a little shovel, concealed in the inner corner of the eye, which he is enabled to protrude whenever he pleases over the greater part of the eye, and by the aid of tears to wipe and wash away the dust and gravel which would otherwise lodge in the eye and give them much pain. The ox has something of the same contrivance, but it is not so movable or so effectual; and when he travels over a dusty road in the heat of summer, he suffers sadly from the small particles of dirt and the insects which are continually flying into his eyes. This portion of the eye, or this third eyelid, seems to be peculiarly subject to disease, particularly to a cloudiness which will change in twenty-four hours from the thinnest film to the thickest opacity, and, as suddenly, the eye will nearly regain its perfect transparency, but only to lose it a second time. These attacks continue, growing gradually more severe, until the trouble extends to the internal part of the eye, and the ox is incurably blind. When it is known that what appears as a film on the surface of the eye is a dimness pervading its substance, and even sinking deep within it, the folly and cruelty of attempting to rub it off mechanically, as is often done, by forcing chalk, salt, sugar, and even pounded glass, directly into the eye, is at once apparent." As in case of general inflammation of the eye, Mr. Skinner recommends bleeding, physicking, and fomentations. Dr. Dadd says, if a film can be observed, wash with a decoction of powdered blood root, and if a weeping remain, use the following astringent: powdered bayberry bark, one ounce, boiled in one pint of water; when cool, pour off the clear liquor.

HIGH PRICE OF POULTRY.

In the NEW ENGLAND FARMER of Dec. 6, it is stated that turkeys at Thanksgiving time, brought from 30 to 40 cents a pound, and were scarce at that.

There is a cause for all things; and no doubt there is a reasonable one for this. While speculation raises the price of many articles, we must hold it innocent of establishing the price of poultry in general, and turkeys in particular.

New difficulties, in some section of country, have arisen to prevent the raising of poultry. One is the rapid increase of skunks, foxes, and other animals that prey upon the poultry yard. Consequently greater care and vigilance has to be exercised, and more frequent losses occur. These causes, of course, increase first cost, and those who wish for turkeys and chickens for an old-fashioned Thanksgiving, must expect to pay a good round sum for them.

The inquiry very naturally comes up, why this increase of foxes, skunks, woodchucks, &c.? We give the answer to this question as it has often been given to us, to wit: "Since the dog tax has been raised to an extortionary amount, many farmers rather than submit to its oppression have killed their dogs, and many valuable hunters and guardians of the house and barn have thus been destroyed; and wild animals have increased in consequence." Further, they go on to say, that this destruction of dogs gives license to hen-roost and clothes-line robbers.

We do not object to a tax on dogs, but let it be reasonable; and, what is more, let us know for what purpose the money arising from this tax is applied. The object of the law was supposed to be the protection of sheep. All very good. But did it anticipate a revenue to the county or State beyond paying damages actually done by dogs? Again, who can tell after this law has been in force long enough to test its merits, how many sheep have been killed by dogs in the State in any one year?

A year ago, I was requested by an inhabitant of another State to ascertain the amount of tax on dogs, and number of sheep killed by dogs in Berkshire County. There was no difficulty in obtaining the amount of tax, and the amount paid for the very indefinite claims of damages to sheep which their owners laid to dogs; but it was a thing impossible to find how many had been killed by dogs,

or how many old sheep had died in the field, which, after their carcases had been torn by the crows, were charged to the dogs; and, worthless as they were, sold at a high price.

But, to leave this subject, we are sure that every lover of turkey and chicken pie will thank us for suggesting an act for the protection of poultry and the destruction of its enemies. Do not grant this protection, however, by taxing the farmer for the skunks, foxes, woodchucks, and other vermin that squat upon his farm, to raise a fund to buy turkeys, &c., for those who like them, because they are scarce and dear. Reduce the tax on the faithful house and farm dog one-half from its present amount, and the object of the law would be fully answered, and skunkdom would be shaken to its centre, while turkeys would gobble a merry requiem over the remains of their adversaries.

Richmond, Mass., Dec. 1866. W. BACON.

AN OLD SUBSCRIBER'S FAREWELL.

To the Editor of the New England Farmer,—

MY DEAR SIR:—I exceedingly regret that I must stop taking your valuable paper, the NEW ENGLAND FARMER; but I would advise all young men to take the paper by all means. It is worth all that it costs. I have sold my farm. I can't work; am nearly eighty years old; and I must give it up. I have had my day, and I have been highly favored by a kind Providence. Just say to every man under seventy, take the NEW ENGLAND FARMER; it is the most honest, best conducted, most useful, and gives the most valuable information of any paper within my knowledge. So says old

GEO. VINING.

Plainfield, Mass., Dec. 8, 1866.

REMARKS.—We prize very highly the good opinion of the aged, and it is with feelings of regret that we erase their names from our subscription books. In this case, we are especially reluctant to comply with Mr. Vining's request, because he was not only a reader of the FARMER, but a valued contributor, and because we fear that with the sale of his farm, and with the conviction that he "cannot work,—is nearly eighty years old—and must give it up," he will allow his mental faculties to fall into inactivity. When men find that they are freezing from cold, it is certain death to sit down with the feeling, "I must give it up." Is it any less dangerous for those who are exposed to the chills of age, to "give it up," and permit themselves to fall into the stupor of "second childhood?"

THE BONE SPAVIN.

Although this is a common disorder among horses, yet it is little understood by either breeders or farriers. The bone spavin is a long excrescence or hard swelling, on the inside of the hock of a horse's leg, and sometimes owes its origin to kicks and blows, and sometimes to natural causes. In the former case it is much more easily cured than in the latter; and those that grow spontaneously on colts or young horses, are not so bad as those that appear in horses that have arrived at their full strength and maturity. In old horses they are generally incurable. Sometime the horse is very lame when the spavin is first coming out, but when it has come out is better for some time, and then grows lamer again as the bone hardens. I would advise you to apply a blister as soon as you have any suspicion that a horse is likely to put out a spavin, and to continue blistering, every fortnight for some time, by which means you may stop a spavin in a young horse. Mild medicines should be used if the horse is young, as they will in a short time wear the tumor down by degrees, which is much better than trying to remove it at once by severer methods, which often have a very bad effect, and produce worse consequences than those they were intended to remove. But in full-grown horses other treatment is necessary. The following ointment is probably the best that can be used: 2 ounces of Cantharides; 4 ounces of Mercurial Ointment; 3 ounces of Tincture Iodine; 4 ounces of Turpentine; 3 drams Corrosive Sublimate; mix with 2 pounds of lard. Cut off the hair from the part affected, and grease thoroughly with the ointment thus made, rubbing it in well with the naked hand. Let it remain two days, then grease the part with lard. In two days more, wash it off with soap and water and then apply the ointment again. Continue this till a cure is effected. But if this treatment fails recourse must be had to firing. Before you fire a horse for the bone spavin, be careful to take the vein out of the way, for it generally lies over the spavin, and you cannot fire deep enough to come at the callous substance without its removal. In order to destroy the vein, cut carefully through the skin upon it just below the spavin, and then just above it, and put a crooked needle under the vein, and tie both ends; then cut the vein across between the tyings, both above and below, and you may either draw the piece of the vein out or leave it in. Let the iron you fire with be pretty sharp; cut four or five nicks upon the bone, and let the iron take hold of the superfluous bone, in order that it may waste away by matterating; and when you have done, lay on some white pitch, pretty hot; put a cloth round it to keep it on. In three days open the place and dress it with yellow basilicon.

THE BLOOD OR BOG SPAVIN.

As soon as you discover the vein puffed or forming a bag, lay on some blistering ointment; in four days after bathe the swelling well with hot vinegar, with a little saltpetre dissolved in it; then put a bandage round it to disperse the swelling as much as you can. If this method does not succeed, you must make two incisions in the skin, lengthwise, as the vein runs one just above the other just below the joint; lay the vein bare; put the end of a bucks' horn under it to raise it up, then fasten it in both places with waxed thread; cut the vein in two at both places within the tyings, and if you think proper draw the vein out. This method of proceeding will cure most bog spavins at the beginning. Blood spavin may be cured by applying the same ointment used in bone spavin; only it should be applied once in six days instead of four. This spavin ointment is very powerful, and when properly used is the best ever invented. M. D.

South Framingham, Mass., Dec. 25, 1866.

A SINGULAR POND.

Silver Lake, formerly called Sandy Pond, is situated in the north-westerly part of Wilmington, Mass. No brook runs into it or out of it; only an artificial ditch, supposed to be dug by the owner of the mill below it. A natural mill-brook runs alongside of this pond for about half a mile, varying from ten to forty rods from it. The water in this brook is from five to ten feet lower than the water in the pond, from which it is separated by a ridge of land suitable for cultivation. The water in the pond is extraordinarily clear, and is good to drink.

According to the tradition handed down from the Indians to our forefathers, and from them to the present generation, where this pond now is there was once high, dry ground, covered with a growth of wood. One strong proof of this still exists. I am told that men in a boat, at the present day, in the middle of the pond, can look down into the

water which is very clear, and see old trees; some standing up and some lying down.

On the north-easterly side of this pond a public highway passes, and the pond lies open to it affording one of the best watering places there is in New England for teams and droves of cattle. It has a sandy shore, which makes the water shallow for some distance, affording ample room for two hundred head of cattle to drink at one time. At the southerly end of this watering place, several rods from the travelled highway, if you go in far enough the water is found to be quite deep.

Something like thirty years ago, on a very hot day, a couple of young men riding in a chaise turned down to this pond to water their horse. After the horse had drank, they drove into deeper water to cool the horse, while they were sitting in the chaise reading. The horse after a little while started ahead and plunging into this deep water was drowned with one of the men in the carriage.

ASA G. SHELDON.

Wilmington, Mass., Dec. 1866.

REMARKS.—After cautioning young men of the danger of allowing a horse to go into deep water to cool himself, or permitting him to stand any length of time even in shallow water, when heated, our respected correspondent proceeds to a discussion of the liability of the town for damages in case of a similar accident which occurred at this place last season, that is of local rather than general interest.

ICE AS A PROTECTION AGAINST FROST.

As the cold weather approaches, and cellars need protection, I send you a hint. Take a sprinkling pot and wet the ground two feet wide around your house. Do it when the weather is very cold, and it will become ice as it touches the ground. Put on water enough to form ice an inch thick. It will keep out frost equal to glass. If there should be snow, so much the better.

PRESERVING MEAT.

My method is to bake fresh pork soon after cut up, and put it in a very cold place to be kept frozen until used, instead of having it frozen first.

Billerica, Mass., Dec. 13, 1866. T. B. E.

LIGHT WANTED ON FACTS ABOUT BEES.

Last spring I had a hive of bees, strong and healthy, but they gave no signs of swarming till the last of June. July 8th, a swarm came out, but after flying some time returned to the old hive. Eight days after, they came out again at half-past five, P. M., and were hived. Neither the old nor new swarm seemed to do very well, and in October, I fed them three dollars worth of sugar. I then left home and did not return till the first of December, when, on examining the old hive, it had no bees nor honey in it but plenty of comb.

The new swarm had but little comb or honey, and no apparent increase of bees. When the first swarm were in the air a king bird darted in among them and took one or more bees. It may have taken the queen and caused them to return. C.

Saybrook, Conn., Dec. 1866.

RAISING TURKEYS.

Your paper has published several articles containing suggestions on raising turkeys. Having practiced some useful methods in rearing turkeys, which have not been brought before the public in any of the articles that have come under my observation, I hope before the time for bringing out the spring broods to find time to communicate. I will now only speak of my success, or the result of care and breeding.

Some fifteen years ago, I commenced to raise such turkeys as my neighbors raised—ranging from six to ten pounds each. For the past few years, instead of six to ten pound turkeys, I produce those that weigh from twelve to twenty pounds. I have pairs of turkeys that will weigh at my door forty pounds per pair; and young turkeys, hatched at the usual time, that will weigh thirty pounds per pair. The rearing of my present superior breed costs no more care or labor than did my former inferior breed. H. A. SUMNER.

Brandon, Vt., Dec. 4, 1866.

AGRICULTURAL ITEMS.

—A correspondent of the *Rural World* advocates the domestication of the deer.

—The town of Glover, Vt., boasts of having paid its war debt in full, and painted its meeting house.

—The *Tribune* says that it has been proved in Central New York that three bushels of salt per acre, hastened the ripening of the wheat two or three weeks.

—G. O. Gill, of West Medway, assures that he raised the past season 7 bushels of good onions on two square rods of ground.

—Dissolve one ounce of corrosive sublimate in one pint of alcohol. To one ounce of this mixture add one and a half pints of water, and apply externally. Vermont wool growers, says an exchange, are very generally using this mixture to prevent their sheep biting out their wool.

—D. Dryer, Victor, N. Y., says he can kill Canada thistles in one season by summer fallowing. Turn the sward in Autumn, and plow again the next summer four or five times. And what is better than all, while you are killing the thistles, you are putting the land in the best possible condition for a crop of grain or grass.

—Isaac H. Leach, of Sonora, Ill., in writing to the New York Farmers' Club, says, "We have not lived long enough to know how durable Osage orange hedge will be, but so far experience proves that the fence is a success, and good against all cattle, horses, dogs, and men, in from three to four years."

—A new textile material resembling hemp has been discovered in Nevada. It has a stronger and finer fibre, and longer staple than hemp; the stalk yields more, and can be stripped and prepared without previous preparation. If all this is true, the plant is an acquisition equal in value to the cotton plant.

—In explanation of the fact that a team can draw a ton of hay easier than the same weight of wood, coal or iron, on the same wagon, over the same road, Prof. Tillman says, the only explanation that can be given is that the hay does not rest as iron does, a dead weight upon the axles. If the hay were pressed into compact bales it would not ride easier than wood, and not much easier than iron. The loose hay acts in the same way that

springs under a wagon would act. The elasticity buoys up and floats the load over obstructions.

—White mustard seed, whole; powdered mandrake; sulphur; powdered worm seed, *Chinopodium Antholminticum*; salt; ginger; charcoal; and poplar bark; two ounces of each, mixed together, and given night and morning, one ounce at a time, mixed with the food, is recommended by "Horseman," of the *Rural World*, as a cure for worms in horses.

—The latest report of the hop trade in England shows a steady demand for all samples of good quality, and last quotations have been fully maintained, but the scanty supply of new hops has materially restricted operations, and the sales have been comparatively of a limited character. The Bavarian and Bohemian markets have again advanced 5s. per cwt. Belgians are firm at extreme quotations.

—C. G. Cotting, Richmond, Ill., writes to the New York Farmers' Club that he has for the last three years salted his pork hams in the same pickle with his beef, and instead of hurting them the beef actually improves the flavor of the ham. Some four years ago he thought he would try a single ham with his beef, and found it so much better than the ones pickled by themselves, that he has always pickled them with his beef since.

For the New England Farmer.

ON BREAKING STEERS.

Mr. Editor:—I promised to write you on breaking steers. In training steers, as in other things, practice makes perfect. No one must think he can succeed as well the first time that he tries the experiment, as when he has practiced on a few pairs. I may give every motion necessary to go through, yet all will need practice before they will become efficient steer-breakers.

I have the following from N. L. Jefts, of Simonsville, Vt., a man that has practiced the plan for several years, and now wishes it made public. I think it worth more to any farmer who has steers to break than the price of the New England Farmer for ten years.

First, take one steer on to the barn floor where he can get nothing to eat, and work up to him gently with whip and ropes in hand; as soon as you get up to him, commence scratching under the chops, and continue until he has no fear. Then put the rope round the body as a surcingle round a horse, and pass another rope between the body and surcingle, and make fast to the off fore foot; scratch awhile, as before; then take a "tip-bowed whip," and commence hawing him by touching him lightly on the off side of his face. When he turns his face towards you, scratch as before. If he tries to get away, take his fore foot from him by pulling on the rope; so continue until he gives up the struggle. If turbulent, put a rope on both fore feet, and if he attempts to run, throw him, by pulling on both ropes, and swinging quickly round his hind parts. So continue to do until perfect control is gained over him, and he will do anything you wish him to. Teach him to back while in the barn, by pulling on one rope and setting his foot back, swinging the whip gently in front of his face at the same time. In a short time you can back him all round the barn floor. Then take him into the barn-yard and drive him, just as you did in the barn, until you get perfect control over him, in the yard. Now take him out where there are cattle or something else to excite him, and drive him as in the yard, and make him do everything you wish. Put him back into the barn again, take off the rope, and drive the same as when first in the barn, until you have gained a perfect control. Then into the yard and drive as when in the barn. Then into the street or field, and drive as in the yard. If turbulent, put on the ropes again until he is subdued. When you have him all right, put him into the barn and feed him. Don't forget to scratch him and be gentle. Then take the other steer, and go through all the changes as with the first one. Now put them together in the barn, with ropes on the same feet as at first, with a surcingle round their bodies. Then let the rope on the near one's fore foot pass through the off one's surcingle and over the near one's back. The rope on the off one to pass through the near surcingle. Commence driving them as when alone, with little or no whipping, and *much* scratching and talking, and be gentle. If one goes wrong take his fore-foot from him by pulling on the rope. So continue until you can drive them anywhere, and back them to your satisfaction; then take them back to the barn, take off the ropes and drive as when alone, until they are perfectly handy.

The next thing is to yoke them. Bring the yoke into the yard and let them get acquainted with it; rattle the ring a little, let them work up to it. Then yoke and drive them the same as with ropes. If you want to put them on the cart or plow put on the ropes. The next thing is to teach them to draw. Let a chain pass between them into the ring and take hold of the end and pull a little at first, then a little harder, until you pull all you can, but at no time so as to stop them, with the idea that they cannot draw what is behind them. Then hitch to a small pole; draw that round for awhile, then something larger, and so on, but nothing that they cannot walk right off with. Then they will always think they must draw all that is behind them and not be balky. Then teach them to "haw" and "gee" by putting them on a pole, one end into the ring, and some one hold of the other end, and swing towards you when you haw, and from you when you gee. The object is to teach them the trade, as much as the young lad, when he goes to the machine, or any other shop to learn a trade. What would you say of the master of

a machine shop who should beat his boy because he did not understand the work before him at first sight! As with the boy, so with the steer. Teach him first. Be kind, and he will do right.

A pair of oxen may be very much improved by the same treatment. A man in one day can take the wildest pair of steers, and make them perfectly handy. Another benefit of "breaking" oxen in this way, is, that when you go into the pasture for them, instead of one going one way and the other the other, as is usually the case with those trained in the old-fashioned way, they will walk side by side straight to the bars. B. D. WILCOX.

Post Mills, Vt., Dec. 10, 1866.

For the New England Farmer.

THE EIGHT HOUR SYSTEM OF LABOR.---No. I.

There being a disposition among laboring men to reduce the hours of labor from ten to eight, and the subject being extensively discussed both in and out of the halls of Legislation, it will be well for the agricultural portion of the community to look at the subject, and be prepared to act wisely with regard to it.

If the mechanics and manufacturers succeed in obtaining a law to establish eight hours as a legal day's work, it will not be long before agricultural laborers will claim the same right. It is true, indeed, that in the project of a law introduced into the Legislature last winter, it was proposed to except agricultural laborers from its operation. But this, I take it, was merely designed to smooth the way for farmers to vote for it. There is no good reason why the hours of farm labor should not be reduced as well as the hours of labor in the mills and work-shops.

The motive powers of the mills are water and steam, and the principal business of the operative is to tend the machinery moved by these powers. The profits of the mills depend essentially upon the number of hours the machinery can be made to run. While the machinery stands still, there is so much capital lying idle. Here, then, is the strongest reason why operatives should labor as many hours in the day as a regard to their best physical and moral condition will permit. Farm labor is carried on by the aid of machinery and animal power. The horse or ox can labor ten or twelve hours in a day, if well fed and cared for, but they can move only at the gait nature has given them, without rapidly exhausting their power, and if they work only eight hours, they can move no faster. You cannot do the same amount of work with the horse or ox in eight hours that you can in ten. The two hours additional rest will not recover them from the increased exhaustion produced by moving with one-fourth more speed. You will find that the law holds good here as well as every where else, that what you gain in velocity, you lose in power. The rule of profit here must be to employ the animal as many hours in the day as he can work without exhaustion. But the machine and the animal cannot work without the aid and direction of human hands.

Now, if human brains and hands can work without exhaustion as many hours as the horse and the ox, profitable farming requires that they should do so, and unless there are reasons founded on humanity and morality forbidding it, this should be the rule. Every observing man knows that a man will work as many hours as his team, and spend considerable time in addition in feeding and preparing his team for labor. The farmer will work two hours in the morning while his team is taking the food necessary to enable it to labor, and one hour at night after the team is released from labor. It is no physical hardship then, for man to labor as long as the horse and the ox can labor permanently without exhaustion.

If it is not well for man to labor as many hours, the reason must be found in his intellectual and moral nature. But has it been found that those who labor ten or even twelve hours a day, are thereby injured morally or intellectually? Our fathers labored twelve and even fourteen hours daily during the summer months. Did they become deteriorated in mind or morals thereby? How is it with the present generation, who labor ten or twelve hours? Are their minds enfeebled or their morals depreciated? Do their stolid countenances and want of enterprise indicate any lack of intellect, or do their untruthfulness, their want of fidelity to their engagements, and their indolence indicate a depreciation in morals?

Statistics show that the average of human life is greater now than in generations past. Man's physical powers are then not diminishing. If, then, in this country, man is improving physically and intellectually, under a system that employs him at labor from ten to twelve hours daily, no good reason is here found for curtailing the hours of labor. Experience shows that adult persons require, on an average, about eight hours for sleep. If they labor ten hours, there remain six hours for meals, for intellectual culture, and for social intercourse. This is on the supposition that they labor every day. But every seventh day is interdicted from labor by the highest authority, and we will suppose that one day of the remaining six, upon the average, taking the whole year into the account, by reason of the weather, holidays, and other causes, is not occupied by labor. This gives us one hundred and four days for rest and other occupations than labor.

Now the great argument for the reduction of the hours of labor is that the laborer, by the present system, is unable to cultivate his intellectual powers, and raise himself to a level with other classes of citizens, and that if he labored a less number of hours he would spend the hours thus gained in reading and study. We may form some estimate of the worth of

this argument, if we can ascertain how laborers in general do actually spend the leisure time they now have. Do they spend it in reading and study or other means of mental improvement? In some instances where there is a strong desire for knowledge, they undoubtedly do. But I refer to the great mass of laborers. Do they make use of those means, in their leisure hours, that are calculated to improve their intellects and raise them to a higher level in society? If they do not, would they improve to any advantage the hours saved from the morning and evening of each day? Would not the morning hour be spent in bed, and the evening hour in idle gossip, neither of which would contribute to their health or intellectual improvement? Some who are industrioussness, disposed or who cultivate land for themselvely would work for themselves three or four hours before engaging in the service of their employers, and thus go to their daily labor with their strength greatly exhausted, and unable to do a full day's work.

Some suppose that if the hours of labor are reduced, wages will be reduced in the same proportion. But this will not be so. This would frustrate the whole object which those who advocate the measure have in view. They complain that capital now receives too large a share of the profits of labor, and demand that whatever sacrifice is made, shall be wholly on the part of capital. They expect the same wages for eight hours labor that they now receive for ten. The laboring man now has barely sufficient to support his family and himself in comfort. He cannot live on one-fifth less. If he is paid by the hour, he must charge one-fifth per hour more than he now receives. In the case of mechanics who work by the piece, the result will be the same. As they are dependent on the running of the machinery, if the machinery runs one-fifth less time, they must charge one-fifth more by the piece to obtain the same wages they now do. So that the reduction of the hours of labor one-fifth will be to the employers equivalent to raising wages one-fifth, while in addition they lose one-fifth of the labor which the machinery or the animals might do without exhaustion. R.

Concord, Mass., Jan., 1867.

For the New England Farmer.

FRENCH MORRILL HORSE.

Messrs. Editors:—In a late number of your valuable paper I notice an inquiry in relation to the origin of the "Morrill Horses."

About twenty years since, French Morrill, Esq., of Danville, Vt., purchased a large, strong, black two-years-old stud colt, thinking to make a farm horse of him, which he did. I think he found him in an adjoining town. This colt became the noted sire and trotter, known as "The French Morrill Horse." He died, I think, four years ago the present winter. It can be truly said of him that he sired *no poor stock*. By far the greater number of his colts were very valuable, some of them bringing figures well up among the thousands. Standing at the head of all his stock, is the noted stallion, "Young Morrill," owned by S. R. Perkins, of Hartford, Conn. Another one of equal merit was burned at Montpelier, in this state, when five years old. "Major Morrill," owned by Messrs. Higgins & Richardson, of West Concord, Vt., is one of the best. Another, called the "Wheeler Horse," owned in Calais, Vt., and two owned by D. A. Benedict, of Williamstown, Vt., are also among the best. There are several sons of Young Morrill, of great value. Among them are "Draco," Danville Boy," "Fearnought" and "Woodstock." Mr. French Morrill gave the pedigree of his horse as follows: Sire, Jemison Horse; g. s., Young Morgan Bulrush; g. g. s. Morgan Bulrush; g. g. g. s., Justin Morgan. Dam by Farrington Horse, he by Vance horse, he by imported Messenger. Alpha.

South Royalton, Vt., Dec. 20, 1866.

Remarks.—This is a model communication. Though occupying but little space, it is a valuable paper. And it gives us much satisfaction to be able to say that after accomplishing its object as an answer to the inquiry of "H. F." in our weekly issue of December 8, it will then find a place in the book form of the Monthly New England Farmer, where the facts which it communicates in relation to the history of the "French Morrill Horses" will be accessible to future inquirers.

WHY YOUNG MEN GO TO CITIES.

A writer in the N. Y. *Times* presents some curious speculations on the probabilities of a time coming, when we cannot, in this country, raise enough to eat. He says that consumers increase very much faster than producers; that the civic population increases much faster than the rural; that young men in the country seek the cities for occupations, or become mechanics, or follow professions, instead of tilling the earth; that farmers do not pay enough for their hired labor in proportion to the price their productions bring; that if it had not been for the great use made of agricultural machinery, our crops could not have been gathered the past year; that if this state of things increases in times to come, as it has in times past, we shall be without food. His speculations are new, curious, and well worth the reading.

There is no doubt but that the cities, the trades and the professions, *do* pay our young men more than the farmer *can*; and there is no doubt but what they can *afford* to, for they make more money than the farmer does. Who believes that the farmer would be so blind to his own interests as not to be willing to pay his help as much as they could get in the machine

shop or office, if he could make as much out of their labor as the builders of machines do.

Last year I paid $130 for a mowing machine which cost its maker a little less than $60 to construct. He made $70 profit. It cost me 12 tons of hay that grew on 6 acres, and cost $4 per ton to make. The land was worth $600, and the interest on it at least $42; so the machine actually cost me $90. The maker pocketed $70 profit; I made $40. He paid his help $3 per day without board, I paid mine $2 with board. I could get no further use from my six acres that year; he could make as many mowing machines as he pleased.

Farmers do not get enough for their productions, and cannot afford to pay so liberally as the trades; the consequence is that our young men flock to trades and professions where they are better paid, and become consumers of food; and when the consumers have so increased over the producers that food begins to be scarce, then food will rise (as every scarce article does,) and as it rises, farmers can afford to pay more for help, and consequently get more of it, and thus produce more, and so we shall not be without bread and butter after all.—*Country Gent.*

For the New England Farmer.

HOW TO KEEP THE BOYS AT HOME.

Mr. Editor:—I have been reading for some time past the articles in different journals in relation to young men leaving the farm for the city.

Boys have complained of "hard work and poor pay," want of society, and of the fact that the city chaps were getting all the best and prettiest of their lady friends to leave the country to grace city residences. Men have complained of their boys taking no interest in the work, of their wanting to spend their evenings away from home, and continually wishing there was no such thing as work.

Well, who wonders at all this? *I* don't. Perhaps I am prejudiced in this matter,—being only a boy myself,—yet having lived a part of my life with my eyes open, and being willing to see a thing or two, I have noticed this:—where you see a home looking pleasant, house neatly painted, the roadside kept free from brush, the walls or fences in perfect order, fruit trees and vines in profusion, good stables and stock, and the house-room, not excepting the sitting room and parlor, open at least once a week, there you will find *contentment* in the form of *boys* and *girls*. Boys, who, when visited by their city cousins, are not ashamed to visit every nook and corner of the premises, from cellar to attic,—field, garden and pasture, for fear of their friends seeing something out of order; and when their cousins shall have gone are not wishing that they, too, lived in the city, that they might do so and so, and look so and so. For, didn't they have as good a pony to drive as cousin Fred? Didn't their sisters appear just as free, and smart, and intelligent as their cousins? They have no idea of leaving the farm, or if they have, it is soon dispelled by hearing "Kate" or "Nellie" playing and singing one of their favorite songs; or by going to the book or paper shelf and finding that the article in which they were so interested is yet unfinished.

Perhaps it is wholly out of place for me to give advice to old farmers. But if advice is good, what matters it *where* it comes from?

If your sons are discontented, look your premises all over. Do they see the inside of your parlor twice in the year, except when *you* have company? If not, ask them to invite a few friends to spend the evening with them, and let them learn the use of it. Do you take anything but a political paper? and doesn't that come in your name? But instead of one, take two or more, and let these all come in the names of your children; let each one have his or her paper or magazine. Did you say you couldn't afford it? How much will they all cost? Let's see. One Agricultural Weekly, say $2.50; one Monthly, $1.50; *Our Young Folks*, $2.00; and keep your political paper, if you choose, which is perhaps $2.00; in all $8.00 per year; 67 cts. per month, or a trifle over *two cts. per day*. Excuse me, Sir, but don't you chew, or smoke, or drink that amount?

Have your sons an article upon the farm which they can call their own, except the hoes and shovels which you have worn down too small for your own use? If not, then get them new tools of sizes according to their capacity, and require them to be cleaned every time they are used, under the penalty of going back to the old tools. Let "Tom" have a colt, "Billy" a pair of steers and "Sammy" a little flock of sheep; or let them choose, as their inclinations may direct. Let them have *something* to call their own, that they will be proud to own. Are any of them musically inclined? Buy them an accordeon or a flute, and do not fret and scold every time you hear them practicing. Give them a piece of land to cultivate in their names, and allow them to work it in regular work-hours, and not compel them to do so in their lawful play time. Present them with books which will have a tendency to raise the farmer's calling in their estimation. Purchase a few tools with which they can make their own sleds or repair a broken implement.

As I am seated at my desk, I have before me books suited to all tastes,—biographies, histories, philosophies, volumes of poems, agricultural works, &c. At a table near by, I find six or seven different weekly papers, a daily, and three monthly magazines. You ask, "Do you find time to read them all through?" No, I do not; but I *do* find time to read the *best* articles in each, and that is all I care to read. In my shop I can find tools enough to make almost any wooden implement to be found on the farm.

But one word more to our older friends. Give your children something to do for them-

selves and something to have for themselves, and let your actions say to them, "I am living for *you*, and trying to help you to live and make home pleasant," and you will have less cause to complain of work poorly done, and less desire on the part of your children to leave the farm. Arthur.

New Hampshire, Dec., 1866.

Remarks—Perhaps the above article will be read with more interest by some, with our assurance that it was written, as it assumes to be, by a farmer's boy. Ed.

HOW TO KILL A HOG.

Hogs, undoubtedly, were made to be killed, and eaten after they were killed. But it is best to do a painful thing—painful to the animal and to the operator—in as humane a manner as possible. We have always thought the mode commonly practiced—that of sticking them—to be unnecessarily painful, and long in the operation. First, the hog is hunted down in order to catch him, and is generally worried, and sometimes injured in this operation; then follows the sticking process, which must be a severely painful one. A better way is to take a pistol that carries a ball as large as a common pea, walk quietly up to the animal, say within six or eight feet, and discharge the ball into the head, midway between the ears, but a little below them. If the shot has been a true one, he will fall dead instantly, and probably without the slightest sensation of pain. He may then be bled at once. We have killed several worn-out horses in this way. They invariably pitch forward to the ground, and undoubtedly die without pain, as they do not stir a limb nor move a muscle. Before shooting they are led upon a bed of muck, prepared for the purpose, where they are cut up, covered with the muck, and left to decompose.

The following is another mode of doing the work, sent to the *American Agriculturist* by a Philadelphia correspondent:—

"I take any kind of gun that will go "loose," load with, say one-third charge of powder, and a *plug of hard wood* about an inch long and the thickness of the ramrod. This I shoot directly into the centre of the forehead of the hog, and he drops at once. The head is not *injured* as to meat; there is no danger of the hog biting you. You have no hard tugging and lifting to catch and throw him, both of which are hard and dangerous work, and the hog will bleed out better, as the nervous system receives so sudden a shock, that he is not able to draw the blood into the lungs, in case the windpipe should be cut in sticking. It is easy to picture laying hogs on their backs, but try it one year, and shooting the next, and my word for it, your pen will ever afterwards be free from squealing on butchering day."

HOPS.

The trade in hops this week has been confined to the immediate wants of local consumers; the market, however, is assuming a position by which, with continued light arrivals, together with the receipt of further orders for export, the present firm market must give way to a material advance in prices. At no time within the memory of the trade have receipts been as light in the month of December as now. This proves the correctness of the reports of the prevailing scarcity in the growing sections, and tends to increase the firmness of this market. In this situation, more liberal receipts are much needed, without which our present stock will not carry us very far into the new year: and brewers who have neglected to secure their supplies will see the necessity of doing so without further delay, having been forewarned that we have no surplus of old hops on hand and that the general scarcity and high prices of foreign hops precludes the probability of importations. The importations into New York last season were 20,000 bales, add to this 10,000 bales of old hops then on hand and it will show a deficiency in the growth of 1865 of 30,000 bales. Exports from New York since November 10,263 bales; Imports, 35 bales. We quote: Old American, 20 a 45c.; Old Foreign, 40 a 55c.; New American, inferior, 35 a 45c.; do, Prime, 50 a 55c.; do. Fancy, 60 a 65c. *N. Y. Tribune.*

Osage Hedge.—A few weeks since, a correspondent of the *Prairie Farmer* entered his objections to the osage orange as a hedge plant, stating that it would neither stop cattle nor swine. These objections seem to have had good effect; for they brought out other correspondents in reply, who have furnished some interesting and valuable statements in favor of the efficiency of these hedges. Among others, C. W. Marsh states that 16 years ago he set out 2,000 plants, making 80 rods of fence. A proof of the good manner in which the work was done is furnished by the fact that all are growing to-day except two. He says he has exercised the same care that he should give in raising a good crop of corn. In five years a good hedge was formed, and it is now eleven years since the line was turned out as a fence, and no horse or horned animal has ever been through it in that time. One end has been used for the last three years as a fence for hog pasture, since which time no hogs or pigs have ever been through it. The cost has not been twenty-five cents per rod.—*Country Gent.*

WINTER SCHOOLS.

FARMERS! read and ponder.—Analyze your systems of education, the qualifications of your teachers, the condition of your school houses, and especially the *modes of teaching*, and learn whether your children are getting a fair return for the large sums of money which you annually appropriate for the support of your schools.

A *true education* is learning how to live out of an aboriginal condition,—that is, as savages live,—to lessen human toil, to surround ourselves with the comforts and even luxuries of life, and at the same time to learn more and more of Him in whom we live, and move, and have our being. A true education will help you to elevate the condition of man everywhere—to study the wonderful works always before us, and, through them, lift the soul in sincere devotion to the Source of all things. If education, as it is called, does not do this, it is as sounding brass or a tinkling cymbal; false, hollow, mere tinsel, and often worse than gross ignorance. It is said that at one period, the people of France were more "highly educated" than those of any other nation on earth; that is, they had a better knowledge of books, wrote more themselves, explored the Sciences and Arts, and surrounded themselves with more of the comforts and elegancies of life than had been known by any people before; and yet at no former period had they been so corrupt. Vice in almost every form prevailed; the whole nation seemed debauched; crime abounded, and man seemed to have lost all faith in his fellow man. Such were the fruits of one kind of education; but it was not true education, for that brings love, harmony, good will to men, and a real growth in purity.

These remarks have been suggested upon reading an address by Mr. GEORGE B. EMERSON, at the opening meeting of the *Social Science Association*, in Boston, on Thursday evening, Dec. 13.

He said, "the common schools are, as they are continually declared to be, the dearest and most precious interests of the people." In the spring of 1821, school houses were nearly all poorly furnished, dirty, badly warmed, and not ventilated at all; ventilation for school rooms was not then discovered.

He then says, "*As is the teacher, so is the school.* Is each teacher, in his own department, allowed to teach and to govern according to his own convictions by his own methods and in his own way? For every teacher fit for his place, can thus teach and govern incomparably better than he could under the dictation of the wisest committee man that ever entered a school. Do the teachers avail themselves of the opportunities presented by the improved grading, to teach, to give real instruction? Not to hear lessons, but to give lessons; to open and enlarge the mind of his pupil and pour in knowledge, not from the pages of a text book, but from the fresh fountain of his own knowledge and thought?"

This is a point too often overlooked in the selection of teachers. Almost any person may listen to a recitation, and decide whether it was well committed to the memory or not. But this is not enough. He should be able to elucidate and illustrate it; to make it as clear to the child's mind as is the noonday sun. His course of study, reading, thought and observation should be such that, upon hearing a recitation, his mind should be filled with appropriate images and facts sufficient to enable him to pour a flood of light into the mind of the child in regard to the subject which he is trying to master. Then he can address the pupil through the eye as well as the ear. He can absorb his attention and inspire him with the inspirations that fill his own mind. Such teaching has life and energy in it. It does not merely skim the surface of things, but goes down deep into the understanding and makes indelible impressions there. All this may be applied to a class as well as to an individual.

Mr. Emerson inquires: "Are the studies pursued in the grammar schools what they should be? Is the great fact that for nearly all children, the grammar schools furnish all the school education they can ever get, sufficiently regarded?

"Almost every girl is by nature destined to

be a nurse, a mother, a teacher and manager of young children. Do all the girls receive in the grammar schools all the helps which they might receive towards performing well and intelligently the duties which belong to those several relations? Ought not every girl to obtain, before she leaves school, some knowledge of the laws of health, some of the great and all-important truths taught by the science of physiology?

"Might not all be taught these great truths? I say not by means of text-books, but by the incomparably more effectual means of good oral instruction? Ought a girl to be allowed to leave one of the best schools in the world without any special preparation for the highest and most important duties of her future life?

"Ought we to consider these schools as what they ought to be, unless boys and girls are taught,—what every decently educated person ought to know,—what air is, what is its uses, properties and laws? What water is? What heat and light are, and how they act upon air and water, and all forms of animal and vegetable life? Ought not every one to be taught what his own body is, and what it is made of? What food is, and how it nourishes the body? Ought not these all-important elements of chemistry to be taught in every grammar school?

"Childhood is the time of life during which the meaning of words is most easily learnt, and when all those words ought to be learnt, which are essential to reading intelligently the best books. * * * Most books upon agriculture, upon the nourishment of plants and animals, upon mines, volcanoes, coal, rocks, &c., &c., * * * are unintelligible to a person ignorant of the meaning of these words.

"Very many of the boys, whose highest and last education is to be given at the grammar schools, are destined to the mechanic arts. Should they not in their schools make some preparation for their vocation in life? Ought they not to be taught the elements of mechanics, the mechanical powers, how the inclined plane works, how wedges, and levers, and wheels, and pullies, and ropes act? Ought they not to be shown what a steam engine is, what pumps are, what the hydraulic press is, and how they act? Ought not these elements of the useful sciences to be taught?"

We shall undoubtedly be met with the reply that there is not time to do this. We believe there is. Procure such a teacher as we have already described, and reject some of the useless practices in nearly all our schools, and opportunity will be found to introduce every branch that Mr. Emerson has suggested, "Most of the time now given to arithmetic in the higher classes is *time wasted*. It does not exercise the judgment nor improve the taste." It is carried to such a degree that the waste of time is enormous. Thousands of boys, and girls, too, spend years of their precious school hours upon mathematics, who will never have occasion to use any of it beyond the "rule of three." Indeed, the common schools of New England have gone mathematically mad upon the subject for the last twenty years. It has become just as much an arbitrary custom as "water-falls" on the heads of women, or the enormous "hoop-skirts" at their heels.

Another practice is that of compelling children to commit solid pages of history to memory, which are repeated pretty much as the parrot repeats his lesson, and then are forgotten. "Can a more absurd mode of teaching be devised? If it is desirable to cultivate verbal memory, there are in our language tens of thousands of lines of the most beautiful poetry in the world to exercise the memory upon."

Another reform should be in the use of school books. With a proper teacher it seems to us that a book on English grammar ought not to comprise more than twenty-five duodecimo pages, and one on Latin grammar not much larger. But that point we will not dwell upon now.

As good as we are willing to admit our schools generally are, we do not think they are accomplishing all they ought for their cost in money and care. Subjects of little importance are entertained and enforced, while those which are essential or indispensable are neglected or entirely dispensed with.

This ought not to be so. No people on earth, probably, take more pains to establish schools, and when they are established, to dress their children in warm and neat clothing, and frequently incur great inconveniences and considerable cost in enabling them to attend. Some parents who live two or three miles from the school house attend so faithfully to this duty that their children are not absent a single day from the stated school hours during an entire term. It is, therefore, an immense loss not to have all the adjuncts of the school as perfect as it is possible to make them. In order to accomplish this you must converse with your children in relation to the practices and interests of the school, and two or three times in the course of the year visit them and judge of their merits or deficiencies for yourselves. It will not do to plead incompetence. You can judge of many things as well as a highly educated person, perhaps better. Be-

sides this your presence will manifest an interest in the institution which will encourage teacher and pupil, and be an advantage to all.

Edward W. Stebbins.—We are sorry to learn, by the *Boston Cultivator*, of the death of Edward W. Stebbins, Esq. of Deerfield, Mass., which occurred on the 27th ult., of consumption, after a long illness, at the age of forty years. Mr. Stebbins was a representative man among the farmers of Franklin county; an active, intelligent, enterprising, noble, generous, high-minded gentleman. He was President of the Franklin County Agricultural Society prior to the election of Joseph Anderson, Esq., of Shelburne, one year ago, and served as delegate from that society in the Massachusetts Board of Agriculture. He held other offices of trust conferred upon him from time to time by his fellow citizens, ever discharging his duty with energy, ability, and marked fidelity. From amid his trusts, and the comforts and joys of a genial and happy home, surrounded as he was by warm and confiding friends, he has been called in the full meridian of life. May He who doeth all things well, and who tempereth the wind to the shorn lamb, sanctify this bitter affliction to the widowed mother and her child.

Winter Butter.—In a recent article on *making butter in winter*, we neglected to speak of the *quality* of the feed given to the cows. This is very important. The milk of cows fed mostly upon coarse meadow hay, would not be likely to afford much butter, and that little very light colored and of poor quality. Meadow hay has scarcely more than a traceable amount of oil in it. Cows, therefore, from whose milk good butter is expected, must be fed liberally on English hay, cut in the bloom, and preserved with most of its valuable juices, and in addition to that, a little corn meal, oil meal, shorts and roots, such as carrots, beets or mangold wurtzels. Give the *turnips* to dry stock. The color of the butter depends upon the cow and the feed, but especially upon the latter. Feed well upon nutritious and oily food, and they will yield firm and yellow butter.

There are multitudes of people who destroy themselves through irresolution. They are eternally telling about what they mean to do, but they never do it.

EXTRACTS AND REPLIES.

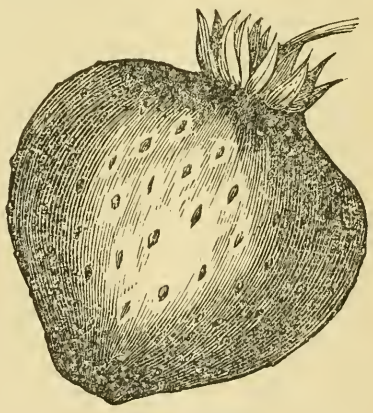
STRAWBERRIES.

Will the Editor please inform us through his paper what strawberry is the most valuable to raise for the market? A Subscriber.

Greenland, N. H., Dec. 26, 1866.

Remarks.—The fact that some particular fruit is the favorite in one locality is not positive proof that it will be the best variety for all other sections. Hence we are always cautious about naming any one sort as the "most valuable," when we know that such recommendation will be read alike by the farmers and gardeners on the long stretch of the seashore, in the sheltered valleys, and on the bleak hills of all New England. There are several kinds of new strawberries which are highly recommended, at least by the nursery men who have them for sale. And our advice to "A Subscriber" in Greenland, or any other location, would be to inquire what variety succeeds best in his immediate neighborhood. Having succeeded well ourselves with Hovey's Seedling mixed with the Early Virginia; and as these kinds are well known, and have been widely disseminated, we venture to recommend our correspondent to give them a trial, unless he can hear of something better. Many of the most practical strawberry-growers for the Boston market still raise the

Early Virginia.



Hovey's Seedling.

BUILDING A BARN.

I intend to build a barn in the spring, and to have a cellar under it for the use of cattle and sheep. The location is some wet. Can I cement the wall and bottom, so that it will be tight and durable? A. F. Mason.

Lancaster, N. H., Dec., 1866.

Remarks.—There will be no difficulty in having a *dry cellar*, if there is fall enough from it for drainage. Do this thoroughly, having the drains two feet deeper than the bottom of the cellar, if you

can get sufficient fall. This should be done even if there were no cellar, because the foundation of the barn would not be likely to stand firmly where the soil is wet and liable to be heaved by the frost.

Can you build your barn on a side hill, so as to drive in at the gable end, and have all your pitching *down*, instead of up? The barn floor, in such case, would be high up, and all the stock below it. This is worth thinking of. If you have a suitable place, would it not be good economy to look at some barns constructed in that manner? The barn is a thing of *every-day* use for the farmer as long as he is farming, and it is, therefore, important that it be so constructed as to keep the stock and fodder safely, and save as much labor as possible.

HOG MEASLES.

I wish you would inform me through the Farmer, if there is any such thing as hog measles? If so, their appearance. I was present at the opening of a hog where the lean meat and a portion of the fat was filled with small globular specks of a whitish color, about the size of a grain of wheat. They were not attached to the meat.

A Reader of the Farmer.

North Littleton, N. H., Dec. 18, 1866.

Remarks.—Within the last fifty years there have been great additions made to our stock of knowledge concerning the animal parasites known as *entozoa*. In relation to their origin, transformation, and re-production, we find so many "facts that are stranger than fiction," that the foregoing inquiry was submitted to the family physician of one of the editors of the New England Farmer, who has furnished the following reply:

There certainly "is such a thing as hog measles," and their appearance is well described as "small globular specks of a whitish color, about the size of grains of wheat." They are dispersed through the system, more particularly the muscular or fleshy portion; are of a soft, gelatinous structure, but are not usually so large as seen by "Reader of the Farmer." They occur much more frequently than is supposed,—not very often being noticed or looked for.

And now, does any one wish to know what they are? For that is the most interesting and important information concerning them. So much has been published of late, upon the subject, that it may seem pedantic in the writer of this, to add anything further. But as there appears to be a necessity for line upon line, we will repeat that the measles in hogs *are the eggs or embryos of the tape worm in man*, and only need the requisite transfer of position, to grow into hideous monsters. They lie unchanged in their soft beds, till, like the eggs of the curculio, and numerous other insects, they are deposited in a situation favorable for their development; and that situation is especially the human stomach, where they speedily elongate into worms, fasten themselves to the sides by small tentacles, or hooks, ready grown for the purpose, luxuriate on the abundant food ready at hand, grow with marvellous rapidity, till they reach, sometimes, the length of sixty feet, and then become uncomfortable tenants, which the landlord is anxious to eject. Such meat is unfit to be eaten by man or beast, and is unsafe until the measles have been utterly destroyed, either by most thorough cooking, salting or smoking.

ARTIFICIAL MANURE FOR HOPS.

What is the best artificial manure for hops? Will it do to put guano on hops after the vines have started in the spring? if so, how much to the hill? When guano is sown on grass land, how much does it require to the acre? Hop Grower.

Alps, Rensselaer Co., N. Y.

Remarks.—We have never grown hops on an extended scale, but have always found them to flourish vigorously on land where we could obtain fifty bushels of corn to the acre. We have raised them where various special fertilizers have been used, such as bone-dust, guano, superphosphate of lime, ashes, &c. They will bear high manuring, and like best that of an oily nature. Guano may be safely applied in the spring if scattered about the hill and immediately hoed in; so may any of the fertilizers usually employed. A single handful may be used to a hill.

Three hundred pounds of guano is the amount commonly applied to an acre of grass land. Twice or three times that amount may be safely used if applied just before or during a rain.

BUILDING A BARN.

Intending to build a barn next spring on level ground, I would like to know if, in your opinion, it would pay to dig a cellar under the stable, some sixty feet long, and wall it up on two sides and one end, to put the droppings in? The dirt is needed to make the driveway, and there are stones enough on the farm, so the only extra expense will be digging and splitting the stones, and laying the wall on one end, one side, and about half of the other side.

There is on the farm, a few rods from the barn, a large bed of excellent muck. Will it do to build a barn tight that has a cellar, without having some sort of ventilation? If not, will two ventilators, each six inches square, leading from the cellar and passing out under the eaves, answer the purpose?

Bradford, Vt., 1867. G.

Remarks.—"Pay," yes, and you will always regret it if you fail to do so.

Build the barn just as tight as you please *where the stock is to be kept*. In other parts, you only want it tight enough to keep the fodder from the weather. The ventilators would not be so much in the way, perhaps, if they were 12 or 15 inches wide and 4 to 6 inches thick. But if you manage your manure heap right, you will have no unpleasant odors in the barn. Haul in the muck plentifully, when it is dry; keep a good winrow of it in front of the droppings from the stalls, and twice a week, or more frequently if you can, cover them over with the muck, and in the spring you will find the best manure heap that it is possible to make.

Make the cellar by all means. A good barn,

now-a-days, without a cellar, is about as inconsistent as a good house without a roof on it! See remarks on "Building a Barn," on another page, in reply to A. F. Mason, of Lancaster, N. H.

FEEDING AND WINTERING BEES.

I have a swarm of bees which I am satisfied will not winter without feeding. They are in an "old-fashioned box hive" with a place for honey boxes on the top. I am desirous of saving the swarm if possible, and want to know of some of your old bee-keeping readers the best manner of feeding said swarm. Also the best time and place in which to do it. Shall I remove them into the house, or let them remain with the rest in the bee-house?

East Randolph, Vt., Dec. 31, 1866. P. E. S.

REMARKS.—The winter care of the "little busy bee," and the time and manner of feeding, seem to be undecided questions with the apiarians. Mr. Quimby says that in ordinary circumstances it is doubtful policy to attempt to winter stocks that will require feeding before spring. Will some of our bee-keeping readers give "P. E. S." the necessary directions and advice?

PULVERIZING THE SOIL.

I should like to inquire through the FARMER what is the best cultivator in use for pulverizing the soil of broken up ground, when it is plowed from ten to twelve inches deep, and not disturb the furrows?

On the same kind of ground, after it has been planted with corn, what will pulverize the soil from 4 to 6 inches deep, and level the rows so as to fit the ground for seeding with oats and grass seed?

W. Waterford, Vt., 1867. OLD VERMONT.

REMARKS.—A harrow, called the "*Pepperell Harrow*," will put your broken-up sward land into splendid condition for planting. It has teeth like a double mould-board plow, so that it *lifts the earth* as it passes along, and not only breaks it to pieces, but leaves it lying light. It is a heavy implement, and ought to have a pair of oxen or horses to move it properly. It is often used, however, with one horse only.

The best implement we have ever found to cultivate with between rows of corn, is *Roger's Steel Tooth Cultivator*. Both implements are sold at the agricultural warehouses in Boston.

CONVENIENCES FOR WATER---NO. 1.

I propose to send you a few short articles upon the subject of water,—its uses and its abuses about farm buildings. Having had nearly 20 years' experience in arranging and supplying farm houses and barns with water, by every method, from the common wooden pump to the most difficult positions for the simple aqueduct, the syphon and the hydraulic ram, I have learned some things by experience that may be of use to the readers of the FARMER. I hope also, to draw out others upon the subject that I may learn that which may be useful in the future wants of this community.

I propose to mention instances that have come under my observation and experience that have been successful, and those that have proved failures.

In my practice with the hydraulic ram, I have had the extremes of eight to two hundred and forty feet elevation; with aqueducts a little over a mile in length, and with wooden pumps, an extreme elevation of 40 feet above the water-mark, by *suction*, (the *books* to the contrary notwithstanding) have come under my observation.

Let me also add that a new invention is about being completed for a *submerged* cistern pump, throwing entirely in the shade all others, in point of simplicity, cheapness and capacity.

Our farmers, yes, and their wives too, are far too easily satisfied with conveniences for water. They make it a necessity for man and beast, instead of a luxury, constantly at hand, as its Giver designed.

Readers of the FARMER, look at your conveniences for water, and say if most of them are not *inconveniences*. How much would it cost you to put your water *in* your house where a constant supply within reach of the tin dipper would greatly facilitate the labors of the wife and daughters? How much to put it in the stable, or at least in the yard? Make your figures, and you will find the conveniences more than 7 3-10 interest on the outlay.

In my next I will mention some cases of unsuccessful efforts in this line, and the causes. P. J.

Randolph, Vt., Dec. 1, 1866.

STABLING STOCK.

Allow me to say to "C." Craftsbury, Vt., that leaving cows out in the yard or in the pasture till "cold nights come on in the fall," is among the things that *used* to be done, but which have long since given way, with our best farmers, to the practice of stabling nights all summer, in order to save a pile of manure of four times the value of that under the old yarding system. Manure, Mr. Craftsbury, is what will make your stock sleek next winter. P. J.

Vermont, 1867.

NUMBER OF RIBS WITH HIND QUARTER OF BEEF.

Please insert in your Extracts and Replies, if you have the information, what the rule is, or if there is any law specifying how many ribs shall be left on the hind quarter of a beef. P.

Hanover, N. H., Dec. 24, 1866.

REMARKS.—The Brighton butchers inform us that there is no law or fixed rule at this market. Either two or three ribs are left upon the hind quarter, as is thought will best suit the buyers.

CURE FOR SPAVIN IN HORSE AND RHEUMATISM IN MAN.

Half pint of brandy, half pint neatsfoot oil, one ounce oil spike, one ounce of camphor gum, and one beef gall; simmer half an hour. Rub well and heat in well with a hot iron. A. K.

Alstead, N. H., Jan., 1867.

AGRICULTURAL ITEMS.

—Dairy farms in Herkimer County, N. Y., have changed hands at two hundred dollars per acre.

—Seven pounds of pork for a bushel of corn is considered a good yield.

—Rats are said to dislike coal tar very much, and mixed with sand it is effectual to stop rat holes.

—Ex-Governor Anderson, of Ohio, recently purchased 10,000 acres of grazing land in Lyons County, Ky., and is now stocking it with choice sheep.

—At a recent rent audit, the tenants on the estate of Mr. J. E. Heathcote, of Apedale Hall, Eng., were

allowed 10s. in the pound upon the losses they have suffered from the cattle plague.

—A Scotch writer, in the English *Agricultural Gazette*, says that superphosphate seems to have lost its power with him, and does not do well on his land, though a few years ago it produced marvellous results. Another says guano does no good now, whilst fourteen years ago the smallest dusting showed a marked effect.

—Hon. Levi Bartlett, of Warner, N. H., writes to the *Country Gentleman* that on a farm adjoining his there were raised this year fifty bushels of ears of pop corn on three-fourths of an acre, for which the farmer received $1.50 per bushel—$75 for what grew on three-fourths of an acre, besides the fodder.

—It is stated by an English horticultural paper that Prof. Schnitzenstein asserts that pure pump, spring, or river water contains an inexhaustible supply of nutriment that is the real staple food for plants; and that the knowledge of this is calculated to throw light on many puzzling phenomena in vegetable physiology and culture. The art of making water nutritious should be the true aim of horticulture and agriculture.

—It is stated by the authors, that earth-worms feed upon earthy matter, from which they digest the fine vegetable mould contained therein, and eject the remainder at the mouths of their burrows. By crawling about in the ground as they do, they are most important and serviceable agents in loosening the soil, and opening it for the air and water to penetrate it. And by throwing out their castings at the mouths of their holes they add to the depth of the soil, and cover tracts that are comparatively barren, with a superficial layer of fine fertile soil.

—Who should have a good garden if not the farmer? He has plenty of land, team, and as much manure as he can spare. There is no class of people to whose families a garden is a greater convenience or more pressing necessity, than the farming class. Removed far from that access to a daily market which makes up for the want of a garden to town and city residents, the farmer's household must do without fresh vegetables and fruits unless they are home-produced. Without a garden, the winter diet is mainly bread, meat, and potatoes.

—Hon. Levi Bartlett, Warner, N. H., writes to the *Country Gentleman* that almost the only kind of potato grown there at the present time is a variety known as the "Orono," said to have been obtained from Orono, Me. It is a large, white, rather kidney-shaped tuber—he thinks, in quality, equal to the famed Carter, and superior to the Cheamgo as a table potato, yielding on his farm at least three-fold over the Carter, Chenango or Prince Albert. C. Clark, a neighbor of his, raised 250 bushels on three-quarters of an acre, on inverted sod land—S. C. Pattee over 200 bushels on half an acre inverted sod, and others in like ratio.

OLD WINTER IS COMING.

BY HUGH MORE.

Old Winter is coming again—alack!
How icy and cold is he!
He cares not a pin for a shivering back;
He's a saucy old chap to white and black;
He whistles his chills with a wonderful knack,
For he comes from a cold country.

A witty old fellow this Winter is—
A mighty old fellow for glee!
He cracks his jokes on the pretty, sweet miss,
The wrinkled old maiden, unfit to kiss,
And freezes the dew of their lips; for this
In the way with fellows like he!

Old Winter's a frolicsome blade, I wot—
He is wild in his humor and free!
He'll whistle along for "the want of thought;"
An I set all the warmth of our furs at naught;
And ruffle the laces by pretty girls bought—
A frolicsome fellow is he!

Old Winter is blowing his gusts along,
And merrily shaking the tree!
From morning till night he will sing his song—
Now moaning, and short—now howling, and long
His voice is loud, for his lungs are strong—
A merry old fellow is he!

Old Winter's a tough old fellow for blows,
As tough as ever you see!
He will trip up your trotters and rend your clothes,
And stiffen your limbs from your fingers to toes;
He minds not the cries of his friends or his foes—
A tough old fellow is he!

A cunning old fellow is Winter, they say,
A cunning old fellow is he!
He peeps in the crevices day by day,
To see how we're passing our time away,
And mark all our doings from grave to gay,—
I'm afraid he's peeping at me!

For the New England Farmer.

MORE ABOUT RENTING FARMS.

I was very glad to see the article on renting farms, in your issue of Dec. 22, 1866; and, with your permission, will furnish some further facts and considerations in regard to the same subject.

There are many farmers who would be glad to let or rent their farms, if they could have them well worked and taken care of, for these, among other reasons:—That on account of age, or poor health, they wish to be relieved from the labor, care and trouble of the farm. Help is very high, and any that is reliable hard to get. While they do not wish to work the farm themselves, they do not like to sell it. Having spent their best days, and done a large amount of hard work on the farm, they have become attached to it; so they dread the idea of selling and giving it up entirely to strangers. And not having much experience in investing money in other ways, they wish to keep it in the farm, where they know it is safe. And then, while relieved from the care and trouble of farming, they would like to go back to the farm for fuel, fruit, and other things needed.

We want more tenant-farming to keep young men from leaving the farm. The fact that so many young men quit the farm for other business, or for distant new sections, thus making help scarce and high, is one of the most serious drawbacks to Eastern farming. Now, one

of the principal reasons for their leaving the farm, in the Eastern and Middle States, is the want of means to buy and have a farm of their own. How often is it said: "I would like farming, if I was only able to own a good farm. But now I must either go where land is very cheap, or try some other business." Hence, one of the best means to keep these men here and secure their labor to help carry on farming, is to induce them to take or rent farms.

True, this kind of farming is not as popular as it should be to secure the best success. But this may be remedied by good farming. With good farming the tenant may live well and make money; and at the same time keep the land in good condition. Poor farming always runs down land. Good farming always keeps land growing better.

To secure good tenant-farming, there are some things necessary that are badly neglected here. One of these things is, that farms are let in a very loose manner. No one should take a farm without being bound to leave it in as good condition as he found it; and give security, if not responsible, for any damage caused by failing to do as he agrees. At the same time it should be stipulated that, on leaving the farm, the tenant should be paid for all grass or clover seed sown, manure applied, and other improvements made, with the consent of the owner, from which he has not had a sufficient benefit. This renders necessary a system of valuations, as now practiced in England. In this way the condition of the land can be ascertained and recorded when the tenant takes possession, and then again when he gives it up; thus showing whether he has improved or injured the land, and how much of either.

When this is the case, the tenant will be careful not to injure or run down the land, in order to avoid paying damages, while he will have the two-fold inducement to improved farming, in the better crops and larger profits secured while occupying the land, and the pay for such improved condition when it is given up. So that, while this course will secure the proprietor from damage or loss on the one hand, it will be no detriment on the other; as he will find his account, in regard to general improvement, in increase of rent; while new seeding and unexpended manures will be charged to the next tenant, who will have the benefit of them.

True, permanent or long tenancy will generally be best for both parties. But these provisions obviate in a great measure the objections to short leases. Probably one of the best systems of tenant-farming, in this country, is that adopted on the Wadsworth farms, in Western New York, which are only let from one year to another. But then no tenant is turned off without cause; the rule being never to turn off a good tenant, nor keep a poor one. These farms are managed by an experienced agent, who each year directs what fields are to be sown to wheat, what put into spring crops, and what mowed or pastured; all being arranged in rotation, so as to keep the land in good condition, and give a reasonable chance to make money. The rent being a certain amount of wheat per acre, for the land sown to wheat; something less, in money, for spring crops; less yet for meadow, and least of all for pasture. The tenant also pays a moderate rent for buildings and orchard, and all taxes. Repairs made by tenant, new buildings and fences by landlord. Stipulations in regard to seeding down and making manure, favorable to the land, without being hard on the tenant. About one-fifth of the farm is generally sown to wheat, which gives a good income to the proprietor, and a good chance to make money to the tenant.

Now, here is a large number of farms, all worked under the direction of an able and competent manager, in a way that tends to the present and permanent advantage of the owner; while it makes a permanent and profitable business for all the good farmers that work them. And all of this is done under a system of yearly leases, arranged and managed so as to work well for both parties. As the land is kept to rent, it is for the interest of the landlord to secure and keep good tenants. So it is not only for the tenant's interest to farm well, in order to raise good crops, but he will do so in order to keep a good farm to work, also. This affords an excellent illustration of what is needed in all cases of renting or letting farms,—a system of management that will secure good tenants, keep the land in good condition, and afford the tenants a good chance to make money.

Should any one object to a system of working farms where the rotation of crops is laid out for them every year, it may be answered, that probably in nine cases out of ten this course of farming would be much better and more profitable to the tenant than any that would be adopted by one not having the best experience; that, in fact, it is a great advantage, by giving the tenant the benefit of an experience that otherwise he would be likely to purchase too dearly. That it is found to be no disadvantage to those working these farms, is proved by the fact that they don't have to go a begging to get good tenants.

Much might be said in regard to tenant-farming in England. It would be easy to show, that under the severe competition with the many other nations that seek a market for a large amount of surplus products there; the heavy expenses for rent, taxes, tithes and poor rates; the large amount that must be invested in manuring, and other necessary expenses, &c.,—tenant-farming is a vastly more formidable and difficult undertaking there than it is here. So great, indeed, are these expenses and difficulties in England, that it has been said the tenant must farm well,—that he cannot get along without. Yet tenant-farmers do

well there, and many make large fortunes. They also form a very respectable class, many of whom become very noted farmers and breeders; and one, a Mr. Reid, of Norfolk, was recently elected to Parliament.

But while tenant-farming here is subject to but few of the difficulties and expenses incident to it in England, it is also entered into with a different end in view. There it is a permanent, life-long business; here, men rent land in order to get the means to buy farms of their own. There, an aristocratic government favors a monopoly of land in the hands of a few; here, republican institutions tend strongly to, and are best subserved and protected by, a divided and very general ownership of land. Hence, the very general desire of all men that have to work land for a living is to own a good farm. So that one of the strongest reasons that can be urged in favor of tenant-farming here is, that taking or renting a farm is one of the best ways of getting the means of purchasing. For while it will not do for a young man to run in debt for the whole cost of a farm, it is not necessary to wait until he can pay all down. The general experience in this section shows that when a man, by renting land or other means, earns half enough to pay for a farm, he runs but little risk in running in debt for the other half. Hence, in urging young men to become tenant farmers, we may bring into play all of the facts, reasons and arguments that can be urged in favor of farming, in preference to any other business. But I have only briefly alluded to a few of these reasons at this time.

Few young men sufficiently consider the fact, that to get into a profession requires many years of study and preparation. And when once in, the professions are so crowded that it is often many years before an opening is found, and a paying business obtained. These difficulties have kept many talented men in the background for years, or finally driven them into other business.

Nor can it be said to be much better in the mercantile business. Here, too, every chance, every opening for or avenue of trade, is crowded and overdone; so that very few of those who seek to gain wealth by trade are successful in getting and keeping it. Here, too, competition and combination do their utmost to prevent the success of the new beginner.

But how different it is with the farmer. He does not have to go through a long and expensive course of preparation before he is ready to commence business for himself. Nor will he have to wait many years before he can find a suitable opening for and get fairly started into business. On the contrary, the money spent in getting an education, and going through a thorough course of professional studies,—with the cost of getting fairly started in business,—would give a young man an excellent start on a hired farm. While the time spent in preparing for and getting fairly started in a profession, if well improved on a good farm, will enable him to save very nearly, if not quite enough, to be able to buy a farm of his own.

And then, with a good farm of his own, how much more independent he will be. Then his business will not depend on the favor of the public, which a few mistakes or a little mismanagement, may at any time deprive him of. Few young men are aware of the trouble and anxiety experienced by all those whose business depends on public patronage. The business of the farmer is not dependent on the public. He can be independent in thought, word and deed. Nor is he subject to that kind of competition that is all the time trying to deprive him of business for others' benefit. Nor is his calling so very uncertain that, for one that secures the desired success, scores, if not hundreds, must fall far short, and a large proportion fail altogether. The same amount of study, tact, talent, energy and enterprise that suffices to make a man only moderately successful in a professional or a mercantile career, will place him in the front rank of the tillers of the soil. F.

Western New York, Dec. 22, 1866.

An Old Agricultural Society.—Berkshire County in Mass., has the oldest Agricultural Society in New England, if not in this country. Its fifty-sixth annual fair was held on the 2d, 3d and 4th days of October, 1866.—*Iowa Homestead.*

Remarks.—"The Massachusetts Society for Promoting Agriculture" was incorporated in 1792, and is now *seventy-four years old.* The *Middlesex County Society,* was established January 6, 1794, and last September it held its *seventy-second anniversary,* and was neither "halt, lame or blind," notwithstanding its age. Indeed, it never before gave evidence of so much power and determination to be useful to the world! Come and see us, brother *Homestead,* and we will show you that old folks can do some things as well as you young giants out West.

Good Effects of Drainage.—Mr. W. R. Wheeler, of West Roxbury, Mass., informs us that a cold wet piece of land, which produced a small amount of coarse grass, come into his possession about six years ago. An open ditch was dug for a main drain, and cross ditches filled with stones leading to it, about two rods apart. The subsoil from the ditches was spread upon the surface, which was lightly manured. Very heavy crops of hay were cut upon this land the past season,—estimated, by those who saw the grass and the hay, at four tons per acre.

Ladies' Department.

DOMESTIC ECONOMY;

OR

HOW TO MAKE HOME PLEASANT.

BY ANNE G. HALE.

[Entered according to Act of Congress, in the year 1866, by R. P. Eaton & Co., in the Clerk's Office of the District Court for the District of Massachusetts.]

INTRODUCTORY CHAPTER.

As the duties of the housewife and mother require many sorts of mechanical labor, sometimes alone and sometimes in the family circle, her instruction and education should be adapted to give her mind activity and regularity, and the habit of reflection, even upon the smallest matters. She should also, however, learn to live with reference to others, rather than to herself. She should be conversable and sociable, cheerful and joyous, and should bring cheerfulness and pleasure into life so often troubled and burdensome.—*Niemayer.*

Home is the central point for all the exertions of the man. For home, he traverses, searches, conquers all the world. Within the house, within the family, the wife is all; she is the inspiring, embellishing and controlling power. She rules by goodness over the sanctuary for which man exerts his powers; she is the economical preserver of the treasures which he earns.—*Zschokke.*

A great responsibility lies upon the wife—the mother of the family. She is expected to attend to the wants of the whole household, and to use and expend judiciously the means placed in her hands for supplying those wants. There are few who give the matter due consideration who do not perceive that the happiness of home-life depends mainly upon her management. Yet, notwithstanding this, and the nominal regard most women have for economy, there is much useless expenditure—sometimes even wastefulness—in many departments of housekeeping.

We have all seen men sordid enough to carry industry and economy to extremes, in their eagerness to accumulate property; and women, too, who, from a false estimate of the uses of wealth, abate not their share of toil and privation in order to contribute towards this end. But by far the larger part of the community prefer to keep the middle path of moderation, and endeavor to use with discretion the good things which Providence has lent them.

Still there are times when even these, wishing to appear generous, or afraid of being called illiberal or mean, fall into a careless prodigality,—only to be repented of when they find they have bartered the peace and comfort of home for a passing folly, and made the coming future a source of anxious foreboding. And beside this indulgence of a false pride—so deserving of censure—there are frequently large outlays for what seem innocent, in fact, laudable purposes.

But it is well to remember that nothing is innocent, or harmless, that can plant another thorn in the pillow of care, or add another straw to the family burden; and the truly prudent woman is ready to yield many personal gratifications, rather than to increase the discomfort of her family, or in any way hinder the interest of one of its members.

She knows that the love of home and home occupations will leave neither time, nor room, for acquiring a fondness for amusement, or pursuits, of an evil or a doubtful tendency;—so she endeavors to make everything about domestic life pleasant and attractive. With that real economy which seeks the best return for all outlays, whether of time or money, she calculates the effect of all her purchases, of all her labors, upon the well-being of her household, and draws upon these resources accordingly.

She is aware that God has given us tastes and fancies, as well as affections and sympathies, and that these must be fed in a healthy manner or they will find nourishment for themselves—perhaps hurtful and poisonous food: and, therefore, she tries to surround them with objects of a refining and elevating nature. She does not provide costly ornaments, nor expensive dresses for them; but she exemplifies in her own person the beauty of a meek and quiet spirit. She sets not before them rich and luxurious repasts; but her well-stored mind yields, continually, an intellectual feast. She may not buy costly books, nor rare paintings, nor fine sculpture, nor curious inventions; but she teaches them to find in Nature beauty, and grace, and elegance, and bids them put forth efforts of their own in gathering and arranging somewhat of this free beauty and grace and elegance for themselves and for others; thus increasing their sources of happiness, and enlarging the sphere of their usefulness. Many a woman, by giving such direction to the faculties of her household, develops capabilities of which she had never dreamed, and fre-

quently opens avenues for thought and action of deep and lasting value.

But even the readiest mind is glad of some hints toward the acquisition of knowledge, or the means of its availability. Much information may at times be recalled or revived by a word spoken in season. And it is the design of these papers on Domestic Economy to afford just that assistance to those inexperienced women, who doubt the strength of their unaided capacities in fulfilling the duties of home-life; to furnish just those hints to those thoughtful ones who know what great need there is of reminding often, even the wisest and most discreet, of the happiness that can be found in a well-ordered household, and how it can best be promoted.

Sometimes the hint or help may come, as in the subject of the first papers, by showing how to beautify the home. Again, it may appear in advice for keeping all things in good order and cleanliness. Now, it may be the way to mend a rent; to patch a hole; to "mak' old claes look a'maist like noo"; to fabricate garments or furniture. Then, it may be the preparation of food, or the treatment of the sick; the care of the little ones and their amusement; the training of older children, and their occupations.

Whatever topic is considered, it is hoped that its suggestions will be found worthy of adoption; and that, in following its teachings, many an anxious and overtaxed housekeeper will find her labors lightened, her cares lessened, and all the inmates of her family made richer in health and happiness.

CHAPTER I.

HOUSE PLANTS—THEIR CARE AND CULTURE.

Everybody loves flowers. There is a charm in their delicate fragrance and evanescent beauty, that awakens in the heart the tenderest emotions. Even the roughest natures are filled with awe as they observe the wonderful mechanism of the plant, and gaze on its exquisite texture and coloring.

From the earliest ages, flowers have been used as types of the holiest sentiments, and as tokens of the highest joy, no less than as personal ornaments and household decorations. So great had become the passion for flowers as an article of display among the Romans, that, in the time of Cicero, sumptuary laws were in force for the prohibition of their use by certain classes of the people. Among the Egyptians, also, in the days of their highest civilization, the taste for flowers, especially the rose, for purposes of adornment, was very general. It is said that Cleopatra paid a sum of money, the value of more than one thousand dollars of our currency, for roses to strew the floor of her supper-room at one entertainment; and, long before this, the Greeks had introduced the narcissus, the violet, and the rose, from Persia,—where they were grown in great perfection,—to ornament the altars of their gods, and to twine into garlands for their youths on festive occasions.

From Persia, through Constantinople, and thence over Europe, came our most familiar flowers; whose individual characteristics still remain the same as in those remote ages. To Holland, among modern nations, belongs the honor of having paid greatest attention to floriculture. The Dutch supply the whole world with bulbous flowers. Their taste for flowers originated in the twelfth century, growing out of a need for patterns in their manufactures of ornamental lace and linen goods.

The custom of cultivating plants in pots and boxes is very common all over southern Europe, where they are hired by the day for the decoration of churches and private dwellings; beside which, nearly every family has its favorite flowers blooming in the same way upon the roofs and balconies. Everybody knows how much the French peasant and the English cottager love to brighten their little windows with a daisy or a violet, while now and then a more ambitious flower from the garden or hot-house of some neighboring nobleman puts forth its graceful foliage, and opens its petals with increased brilliancy, before the admiring eyes of half-fed and scantily clothed children.

And here, in our own country, if the people of the rural districts, with abundance of wild flowers easy of access, and having gardens for the more hardy kinds, seldom cultivate window plants, in the villages and manufacturing towns one can scarcely pass through a street without finding his attention arrested by a gay geranium or verbena, nodding at some window pane. The operative in the mill has her shelf or stand for floral treasures; and side by side with clumsy imitations of silk and cotton, they grace the milliner's little room; while their beauti-

ful faces peer out from the murky atmosphere of machine shops, or flourishing among the grocer's barrels and boxes out rival in fragrance his most delicious spices.

Yet there is still room for more and better floral adornment of our houses and places of business. In truth, no home should be without its influence. No one fully realizes till it is proved by actual experience, how much benefit, both moral and mental, may accrue from the proper cultivation of a single plant. This is especially the case in a family of young people; and if any mother has never tried it, let her begin the experiment as soon as possible. Some, I know, have attempted the growth of house plants, and meeting small success, or failing entirely, have given it up. Let these, too, begin once more, and by following a few simple rules, see if they cannot have healthy and handsome flowers.

And now the first word of advice is—*do not have too many*. One strong, blooming plant is better than half-a-dozen sickly things that never bloom.

Remember that plants need light and sunshine. *Give them the morning sunshine*, if possible. If you have no window looking toward the east or south, the afternoon light is better than none.

Water them regularly,—always with water blood warm; in the coldest weather rather warmer. It is a good plan to see how warm the water is, after draining through the pot in the saucer. Unless blood warm, then its temperature must be increased in future. *Never pour water into the saucers*, they are only for drainage. Never apply water to the collar or crown of a plant; if poured upon the soil it should be near the edge of the pot.

Never use glazed pots; or crockery or painted vessels; except as a covering to that which holds the plant. The ordinary light colored, soft baked clay pots are the best.

Use good soil,—of this more particularly hereafter,—and no manure but in a liquid form; and this at regular intervals, according to the season and the desire for hastening or retarding the blossoms.

Keep both pots and plants clean. Never allow the pots to get mouldy, which they never will, if washed with soap-suds thoroughly every week. At the same time, also, wash the leaves of the plants.

Remove all flowers and all leaves as soon as they begin to decay.

And, now, two of the most important rules: Avoid extremes of heat and cold; never allow one insect to remain alive upon or near your plants. To accomplish this last requisite, disagreeable as it may be, the thumb and finger remedy is the best. A careful search once a week over every part of the plant, especial attention being paid to the under side of the leaves, and the most tender buds and branches, will supersede the use of smoke and sulphur and tobacco tea. A soft tooth brush to detach the insects and destroy their eggs, is of great service where the creatures have actually gained an abiding place.

Keep the temperature of your room nearly equal, both night and day. Never let it fall below forty-five, nor rise above sixty or sixty-five; and occasionally ventilate it, lowering the window on fair days, when the sun shines warmly on the plants, taking care that no draught reaches them.

Loosen the earth about the roots of the plants, once in two or three weeks, by digging it carefully with a common steel table-fork; and be sure that it never gets caked or crusted. Apply water either by a small water pot having a finely perforated nose, or use a piece of the finest sponge—filling it and squeezing it over the leaves and branches, in a shower; never water them from a pitcher or mug, and never wet the leaves when the sun shines hotly upon them. These particulars, carefully heeded, will insure a good and beautiful growth of all our best parlor plants.

At first sight there seems a good deal of work to do; but, when once the habit is established, it can all be accomplished with very little trouble.

[The next paper will furnish a list of plants best adapted to house culture, give suggestions as to choice for particular situations, mention facts in the history of each, and present in detail the most successful method of its culture and propagation.]

HOUSEHOLD ECONOMY.

CONTRIBUTED FOR THE NEW ENGLAND FARMER.

Mr. Editor:—I send you a few receipts which I have found useful, hoping thereby to do a little towards filling up the column in your paper devoted to "Household Economy," and to which I have come to look for many valuable

hints in the way of housekeeping—of which, by the way, no matter how much experience one may have had, there is always something to be learned, as every housekeeper will tell you.

Bread Making.

Very few people know how to make *good bread*, and it is no cause of wonder to me, when I remember how many times I have failed, and that when I have taken the most pains, and was the most anxious to succeed. To make good bread the flour must be of the best quality—this is indispensable. During the summer I use yeast cakes, dissolving one the night before using, in a small quantity of warm water, into which I stir flour, not so much but that it will pour readily, and set it away to rise. In the morning I take a quantity of sweet milk —if milk is not plenty, use part water, but all milk is better—scald it, and when it is cool enough stir in flour, and when nearly as stiff as you desire, add the yeast, stirring into it previously a half-teaspoonful or so of sugar. After it has stood long enough to rise thoroughly—but not too long, as it will have become sour,—knead it well. This is an important point, for bread can scarcely be kneaded too much. Put it in the tins and set it to rise the second time. When it is ready to bake, it should be placed in a hot oven and baked from a half to three-quarters of an hour, according to the size of the loaves, but be sure that it is well done. Remove the bread from the tins as soon as baked, and stand the loaves up edgewise to cool.

Cookies.

One cup of butter; one of cream; two of sugar; one egg; a teaspoonful soda; flour enough to roll. These are very nice, and will keep a long time.

Cake.

Two eggs; one cup of sugar; one-half cup butter; one-half cup sweet milk; two cups of flour; one teaspoonful cream tartar; half teaspoonful soda; nutmeg. Fruit, and other spices added, make a good fruit cake.

Indian Breakfast Cake.

Two cups sour milk; four tablespoonfuls cream; the same of brown sugar; two cups Indian meal; one of flour; one teaspoonful soda. This makes the best Indian cake I have ever eaten.

Allow me to add that good food is the *cheapest*, always. I do not mean rich food, that spoils one's appetite too soon; but good, plain food, prepared without stinginess, and served in a tasteful and inviting way, will always challenge the poorest appetite. Let me add again, for the benefit of young housekeepers, when you have a good receipt don't spoil it by scrimping, as I have seen some do,—leaving out an egg, or not using quite enough sugar, or spoiling it in some way, which is, to my thinking, very poor economy. When you make pies and cakes, make them as well as you possibly can, and you will have nothing to waste because it is too poor to be relished.

Katie S.

North Brookfield, Mass., 1866.

Remarks. — Capital advice. Believing in such a creed, our young friend cannot fail to become a model housekeeper.

Cream Cake.

One cup of cream; one cup of sugar; two eggs; a little salt; one teaspoonful of soda; two cups of flour.

Doughnuts.

One cup of sugar; one cup of sweet milk; one egg; one teaspoonful of soda; one of cream tartar.

Poor Man's Cake.

One cup of sugar; one cup of sweet milk; three cups of flour; one teaspoonful of soda; one of cream tartar; a piece of butter the size of a hen's egg. Susie.

Marlow, N. H., Dec. 23d, 1866.

Remarks.—Our lady readers will oblige us by keeping this corner of our paper well filled. We have frequently received commendations for receipts furnished by our correspondents.

Ed.

DUTIES OF AN ENGLISH LADY'S MAID.

One of these not-to-be-envied persons, a race which may be classed with that of governesses, has recently made disclosures throwing a peculiar light upon the women of rank in "Old England." "Much is required from us in London," she writes: "We must, above all, be very punctual, for fashionable ladies change their dress at least five times a day during the season. We must have polished manners, be no older than thirty-five years, and always be cheerful and good-tempered, although for weeks we are kept without sleep until four o'clock in the morning—a practice which is equally injurious to eyes and lungs. We are

expected to cut and fit and to use the most improved machines, and to dress hair for the morning, evening, and court costume as well as for the drive; to iron well, to read, write, cipher; to speak French and German, and, if possible, to have travelled. There is still another function of a lady's maid which is supposed to be a modern introduction, but which is, in fact, merely a revival of an ancient custom. We must be able to paint in pastel, not indeed *after* nature, but *upon* her. To beautify our mistresses we must redden the cheeks, put antimony upon the eyelids, pastel upon the brows, introduce belladonna into the eyes in order to enlarge the pupils, paint blue veins upon the temples, and use ninon paint and pearl-white upon the rest of the skin. We must change the hair to a reddish-brown by means of a corroding material or of "palma vecchio" which is now used in preference for that purpose; and we must be possessed of great skill in applying all these ingredients, as their use is universal with the old as well as with the young.

TWO LITTLE PAIRS OF BOOTS.

Two little pairs of boots, to-night,
Before the fire are drying,
Two little pairs of tired feet
In a trundle bed are lying;
The tracks they left upon the floor,
Make me feel much like sighing.

Those little boots with copper toes!
They run the livelong day!
And oftentimes I almost wish
That they were miles away!
So tired I am to hear so oft
Their heavy tramp at play.

They walk about the new-plowed ground,
Where mud in plenty lies,
They roll it up in marbles round,
Then bake it into pies;
And then at night upon the floor
In every shape it dries.

To-day I was disposed to scold;
But when I look, to-night,
At those little boots before the fire,
With copper toes so bright,
I think how sad my heart would be
To put them out of sight.

For in a trunk, up stairs, I've laid
Two socks of white and blue;
If called to put those boots away,
O God, what should I do?
I mourn that there are not to-night
Three pairs instead of two.

I mourn because I thought how nice
My neighbor "'cross the way,"
Could keep her carpets, all the year,
From getting worn or gray;
Yet well I know she'd smile to own
Some little boots to-day!

We mothers weary get and worn,
Over our load of care;
Yet how we view our little ones
Let each of us beware;
What would our firesides be to-night,
Were little boots not there.

THERE is no sauce in the world like hunger, and as the poor never want that, they always eat with a good stomach.

Youths' Department.

VERY PROUD TO-NIGHT.

It was a cold night in winter. The wind blew and the snow was whirled furiously about, seeking to hide itself beneath cloaks and hoods, and in the very hair of those that were out. A distinguished lecturer was to speak, and notwithstanding the storm the villagers ventured forth to hear him. William Annesley, buttoned up to the chin in his thick overcoat, accompanied his mother. It was difficult to walk through the new-fallen snow, against the piercing wind, and William said to his mother:

"Couldn't you walk more easily if you took my arm?"

"Perhaps I could," his mother replied, as she put her arm through his, and drew up as close as possible to him. Together they breasted the storm, the mother and the boy who had once been carried in her arms, but who had grown up so tall that she could now lean on his. They had not walked far before he said to her:

"I am very proud to-night."

"Proud that you can take care of me?" she said to him with a heart gushing with tenderness.

"This is the first time you have leaned upon me," said the happy boy.

There will be few hours in that child's life of more exalted pleasure than he enjoyed that evening, even if he should live to old age, and should, in his manhood, lovingly provide for her who watched over him in his helpless infancy. It was a noble pride that made his mother love him, if possible, more than ever, and made her pray for him with new earnestness, thankful for his devoted love and hopeful for his future. There is no more beautiful sight than affectionate, devoted, obedient children. I am sure that He who commanded children to honor their father and mother, must look upon such with pleasure. May He bless dear William, and every other boy whose heart is filled with ambition to be a blessing and "a staff" to his mother.

STRENGTH AND SAGACITY OF THE ELEPHANT.

M. Phillips, an Eastern traveller, relates that one day he went to the river, at Goa, a Portuguese settlement in India, and in a dock near to the river side a large ship was building. He saw a plot of ground near, covered with heavy beams ready to be used for this purpose. He watched and saw the men fasten the ends of a beam with a rope of great strength and thickness; this rope was carried to the elephant employed to assist the workmen. The animal conveyed the rope to his mouth, and after twisting it round his trunk, he drew the beam without any conductor to the

place where the ship was building. Other elephants were brought to assist in the work, and some of them were able to drag beams so large that twenty men were unable to move them. But what surprised the traveler most was, not the amazing strength of the animal, but its sagacity; for when other beams obstructed the road, the elephant would raise the end of his own beam, that it might slide easily over those which lay in his way. M. Tereen, another traveller, tells us that he also had the opportunity of noticing the sagacity of an elephant. Its master had let out the animal for a certain sum per day, and its employment was to carry with its trunk timber for a building from the bank of a river. This business it carried on very cleverly under the guidance of a boy, and the sagacious animal laid the pieces of timber one upon another in such exact order that no man in a timber-yard could have done the work better.

THE STOLEN DOG.

A gentleman had a good shepherd dog which could do almost everything except talk. If every boy and girl were as faithful to perform every duty, the world would be a great gainer. One day a drover bought a flock of sheep of Coly's master, and bade Coly go along and help the man drive them. It was thirty miles to the man's home, and he was requested when he got there to feed the dog and bid him to go home. It would have taken a good many smart men and boys to have kept the flock in as good order in that long march as that one faithful driver. The man was so pleased with his skill, that he made up his mind to keep the dog. He was to leave the country soon, so he shut him up and tried to win his heart away from his old master. But his advances met with no response. He ate the nice food given him like a sensible dog, but he watched his chances of escape as keen as if he had been a prisoner of war at Richmond. But for days he was unsuccessful.

At last, however, a chance occurred, and he was not slow to improve it.

"That fellow tried to steal me," he reasoned, "and I shouldn't wonder if he meant to steal all those sheep, too. I'll just gather them all up and take them home to my master."

So to work he went, and managed to find, or make, an opening out into the highway, and then marched them all off in the dead of night like any other fugitives. What was the surprise of his old master to see him come home with his flock after so long an absence! He was certainly too honest a dog to enter into partnership with a thief.—*Merry's Museum.*

THE NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

NEW SERIES. **Boston, March, 1867.** VOL. I.---NO. 3.

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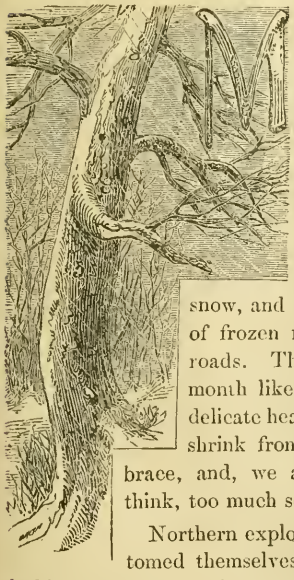
THOUGHTS FOR MARCH.

"'Tis ever so. The ties of friend and kin,
Are found most strong and most with pleasure rife,
Among the dwellings of the poor, and in
The unambitious walks of rural life.
With woods around them, waters at their feet,
With flowers beneath, and fragrance in the air,
'Tis not in vain that they each other meet;
Not one, that has a pleasure or a care,
But calls a kindred heart, that joy or grief to share."

Prof. Thomas C. Upham.



March, in the ceaseless round of the seasons, has come again! Constant only in its changeableness. The month of roaring winds and summer airs; of hail, sleet and snow, and genial showers; of frozen ruts and muddy roads. There is no other month like it. Persons in delicate health dread it and shrink from its rough embrace, and, we are inclined to think, too much so.

Northern explorers have accustomed themselves to the cold of the highest latitudes, where proof brandy would freeze and a moment's exposure of the uncovered skin would affect it like a burn. Yet they retained their health and activity to a remarkable degree. But their entrance into such a rigorous climate was gradual, and their clothing accommodated to it as they approached its stern realm.

Such should be the case with us. Not hide away from March for a week at a time in badly ventilated rooms, and then go timidly, and burdened with surplus garments, into the cutting blasts; but, properly protected, boldly face every variety of weather once or twice a day, in some useful calling. This will kindle the blood into a flame, and soon make the system proof against all the vagaries of March.

It is interesting to observe how customs change. It was formerly a custom for persons *to be bled* in the spring, even for those who were well enough, in order to prevent disease. So it was common to marshal a whole family of buxom boys and girls—the latter with rosy cheeks and flashing eyes, and the boys with fists as hard as mallets—and for the good mother to administer to each a teaspoonful of *sulphur and molasses* to ward off the demon of disease.

These things may be done now in some places, but we have seen or heard nothing of them of late years.

Spring may have its peculiar diseases, but well regulated diet, air and exercise will be of incalculably more service in guarding against maladies and keeping the body healthy than

drawing away your heart's blood or swallowing nauseous nostrums.

1. Engage in some employment that will be useful to the world. This will keep the mind occupied and in a calm state.

2. Eat at regular times, plentifully, of plain, nutritious food, and take nothing between meals, except water when thirsty. Especially, eat nothing after an early tea time.

3. If, after these, the bowels seem inactive, regulate them by small doses of aperient medicine—but very sparingly. Fasting, by omitting a meal for several days, might be better.

4. Do not take too much exercise before breakfast, but rather take the breakfast earlier.

"After dinner rest awhile."

5. Do not eat until the appetite craves no more. Too much of any sort of food, but particularly of meat, prevents the natural action of the system and induces disease.

6. Guard against sudden changes of weather. That is, do not remain still in a cold wind when the skin is moist with perspiration. At such times the pores are open, and there is danger that they may be suddenly contracted, not to be easily opened again. This is what is called "taking cold." The pores of the skin are closed so that the heat and "insensible perspiration" cannot escape, and a "raging fever" is often the result.

7. Bathe the whole surface of the body once a week, and rub it lustily.

8. Let us do as much in this direction for ourselves, as we do for our valuable animals, and we shall have little fear of March weather.

FARM WORK FOR MARCH.

Cellars.—As warm weather approaches, few things are more important about the house than to see that the cellar is in good order. This month affords opportunity for a thorough removal of decayed vegetables, sorting the potatoes for planting, examining the casks, tubs, or whatever vessels are to be used, and to have a general cleansing of this important department.

See that the beef and pork were properly packed, and are in good condition to remain sound during hot weather.

Whitewash the cellar walls, timbers and every part except the bottom. That should be hard and smooth, so that it can be swept and kept clean.

Poultry House.—Eggs and hens too, will be scarce, if the poultry house is infested with vermin. Pour boiling water over the roosts, and indeed, into every crack of the building, if you can, then wash clean with strong soap-suds, and when this is dry, whitewash the whole.

Catch the fowls and rub a little grease under the wing, on the head, and touch various places on the body with it. The fowls will amply repay you for keeping their house scrupulously clean.

Clover Seed.—Sow clover seed this month on lands that were laid to grass last summer or autumn. Six to ten pounds per acre, of red clover.

Sheep.—Feed them on sweet clover hay, an occasional mess of roots cut fine, of corn, or beans, and give them an opportunity to browse pine and hemlock branches, by scattering them about their yards, and they will repay it all with liberal interest at clipping time.

Milch Cows—Breeding Sows—Fruit and Shade Trees—Young Cattle—Colts and Stock generally, how are they prospering?

Maple Sugar.—Has any one thought about it? We have an interest that way.

PASSAGE OF THE TARIFF BILL.

After some unimportant amendments, the tariff bill reported by the Finance Committee passed the Senate Thursday, Jan. 31st, by a vote of 27 to 10. This is a much larger majority than was generally expected. We understand that the duties on wool are substantially the same as those in the House bill, and considerably higher, on some grades, than was recommended by Mr. Wells. On wool of the first class, valued at 24c or less per lb., a duty of 10c per lb., and 10 per cent., *ad valorem*, is levied, instead of the present rate of 3 to 6c per lb., which Mr. Wells would have retained. On coarse wools there is a reduction of 2c per lb. from present tariff, where Mr. Wells recommended a reduction of 6c per lb. On sheep skins, the present rates of 20 per cent., are increased to 30c; and on shoddy, flocks, &c., 12c per lb. to be levied, instead of 3c, as heretofore. The duties on woolen cloths, which were somewhat changed from those reported by the committee, finally passed as follows: on all woolen cloths valued at $1.50 per pound and less, 45 cents per pound and 25c *ad valo-*

rem; over $1.50 and less than $2 per pound, 50 cents per pound and 40 per cent. *ad valorem*; over $2 per pound, 50c per lb. and 45 per cent. *ad valorem*. Mr. Wells proposed 24c per lb., and 35 per cent. *ad valorem*. The bill now goes to the House for its consideration.

CRANBERRIES.

We find in the recently published transactions of the Essex County, Mass., Agricultural Society, a statement of the mode of cultivation of cranberry meadows, successfully practiced by Gilbert Conant, of Ipswich, for which a premium was awarded by the society.

In the summer of 1861, he commenced on a meadow of about one acre, by cutting a ditch to drain it. The muck which was thrown out paid for the labor of ditching. It was then plowed from four to six inches deep, according to the inequalities of the surface. A small flood-gate was made, at an expense of $5, by which the meadow is flowed annually from about the first of November to the first of May. There have always been some cranberry bushes on this spot, but only a very few were ever gathered upon it previous to 1861, when Mr. Conant commenced operations. He neither planted vines nor sowed the seeds, having found, by experience, that "whenever any meadow adapted to the cultivation of the cranberry is properly prepared, vines will spring up and bear spontaneously." Two loads of sand were spread upon the ice in the winter of 1863, which greatly increased the productiveness of the vines on the spots where the sand was applied. Of the crops for the five years past, Mr. Conant gives the following particulars:

The first summer after preparing the meadow as stated, vines sprang up and grew considerably on the lowest parts of it. The second summer the vines increased and grew rapidly. In the fall of that year I gathered about a half bushel of cranberries. In 1864, the vines blossomed full, and after the berries were set, gave promise of a fine crop; but an early frost, while they were quite green, injured them so that I gathered but about a bushel. In 1865 the vines had increased in some spots on the meadow, so that they had almost killed out the grass, and in the fall, when the berries were ripe, they lay so thick that the vines were scarcely visible. I gathered twenty bushels of cranberries, worth three and a half dollars per bushel. The expense of gathering and marketing these berries was less than ten dollars. This year, 1866, there are but very few cranberries in this section of country, though my vines are bearing better than I have seen any others on fresh meadow.

Fine Stock.—A correspondent who visited the farm of V. M. Hubbard, Esq., of "North Hollow," Vt., writes us that the twenty-one head of horned cattle, the five horses, and the fifty Spanish Merino sheep, which are fed at his stalls, well deserve an honorable mention. For sheep, in particular, he thinks Mr. Hubbard has a discriminating eye, and that his flock has few equals, even in the famous Champlain valley, as they exhibit marks of superior breeding. He has two bucks which served two hundred and forty-eight ewes,—fifty-five of his own, and the remainder of his neighbors. Mr. H. has three hundred acres of good land, and our correspondent thinks, with such a farm, and such stock, he might be tempted to settle down as a Vermont farmer, himself.

NEW PUBLICATIONS.

Transactions of the Essex Agricultural Society in Massachusetts for 1866.

We are indebted to the Secretary of the Society for a copy of this publication. Hon. Otis P. Lord delivered the address. The Treasurer reports funds on hand to the amount of $9,215.13. The officers for the year ensuing:—President—William Sutton, South Danvers. Vice Presidents—Lewis Allen, of South Danvers; David Choate, of Essex; Josiah Newhall, of Lynnfield; E. G. Kelly of Newburyport. Treasurer, E. H. Payson, Salem. Secretary, Charles P. Preston, Danvers. To say that this issue is equal to its predecessors is the highest praise that the society can desire.

What a Farmers' Club Did.—Mr. Solon Carter, of Leominster, Mass., made the following statement at a late meeting of the Fitchburg Farmers' Club:—

"Before the Farmers' Club was established, Leominster farmers seldom raised 50 bushels of corn per acre, and the average was far below that figure. Now, I think they average near 60 bushels."

State Board.—John L. Cole, of Williamstown, succeeds Lysander Johnson, of North Adams; and T. D. Thatcher, of Lee, succeeds Harrison Garfield, of the same town, on the State Board of Agriculture of Massachusetts.

The Tobacco Crop.—The St. Louis *Democrat* publishes some statistics of the tobacco crop of the recent season. In Missouri it is reported at from 12,000 to 15,000 hogsheads. This is far below an average crop, but it is said that the quality of the tobacco is unusually good. In Virginia the crop has fallen off one-third—it is reported at 70,000,000 pounds—but is "the best ever made as respects quality." In some counties of North Carolina, lands which had been previously devoted to tobacco were this year planted with cotton. The yield for that State is 35,000,000 pounds. The yield in Maryland is placed at 35,300,000: Tennessee at 39,500,000; Kentucky at 61,000,000; Texas at 90,000; Alabama at 270,000; Arkansas at 1,700,000; Florida and Georgia each 600,000; Louisiana at 40,000; South Carolina at 35,000, and the Northern States at 52,150,500 pounds.

CAPACITIES OF CULTIVATED SOILS.

Every farmer is aware that soils are of different capacities, some being what is considered naturally fertile or productive, and some nearly barren. Recent investigations of scientific men, and their analysis of the ashes of the various kinds of plants, have imparted many highly valuable and important lessons upon this subject.

If a plant which requires for its healthy development a large per centum of silica, or sand, be planted in a soil which contains but little of this earth in a soluble state, we cannot reasonably expect that it will succeed as well as if the soil contained the element so essential to its physical perfection.

Under such circumstances, the plant, although it may strike root and flourish with great vigor, apparently, for a time, will nevertheless ultimately sicken and die. This result is analagous to depletion, or starvation, in the animal kingdom; the organs demand a principle which they cannot obtain, and disease and death are the inevitable and speedy result.

The presence of sand, clay, and vegetable matter in a soil is deemed indispensable to all crops. Sand is the most essential of the earthly ingredients of soils, and most predominates in them, though where it exceeds eighty-two per cent., the soil is virtually barren; for it is then too porous to retain long either moisture or manure. Silica, or sand, forms so considerable a portion of the ashes of wheat straw, that when they are exposed to the action of the blow pipe, it unites with the potash found also in the straw, and forms an opaque glass.

The same fact applies with equal force to the other mineral accessories of the food of plants, potash, soda, magnesia, lime, &c. Although, in a greater or less quantity, these as well as silex are extant in every soil, yet frequently in too small quantities to produce that condition which we characterize by the term fertility. The following table will tend to illustrate the importance of several of these elements:—

	Salts of Potash and Soda.	*Lime and Magnesia.*	*Silica.*
Silica Plants.			
Oat straw with seeds . .	34.00	4.00	62.00
Wheat straw	22.00	7.20	61.05
Barley straw with seeds	19.00	25.70	55.03
Rye straw	18.65	16.52	63.89
Lime Plants.			
Pea straw	27.82	63.70	7.81
Potato (herb)	4.20	59.40	36.40
Clover	39.20	56.00	4.90
Potash Plants.			
Turnips	81.60	18.40	
Beet root	88.00	12.00	
Potatoes	85.81	14.19	
Sunflower	84.30	15.70	

Several years ago, the theory became quite popular, that by analyzing the soil we could ascertain what were its characteristics, and that by supplying deficiencies we could render a soil productive of any crop we might be desirous of cultivating. We have no doubt that a correct analysis of a soil would often prove useful to an intelligent farmer; but we greatly doubt whether, with such an analysis, he would be able to supply what he might deem deficiencies, and *always* secure a crop.

There is something in the principles of action, between soil and plant, that is not yet revealed to us. Besides this, to analyze soils, one must be a practical chemist, and few farmers have the time to enable them to perfect themselves in the manipulatory process of this recondite science. Chemistry is undoubtedly essentially aiding us in our labors. The minds of many earnest men are engaged in learning what soils require, in order that they may produce profitable crops. If we feed lime or soda when they require something else, we do not benefit the plants, but sometimes produce actual injury.

So with the other various elements which enter into their structure, and which we are oftentimes required to supply, wholly or in part, by the application of manures.

Science has demonstrated that no inconsid-

erable portion of the food of plants is derived, by absorption, from the atmosphere. Dr. Liebig, in his "Organic Chemistry of Agriculture and Physiology," says: —

"Carbonic acid, ammonia and water, yield elements for all the organs of plants. The atmosphere and the soil offer the same kind of nourishment to the leaves and roots. The former contains a comparatively inexhaustible supply of carbonic acid and ammonia; the latter, by means of its *humus*, generates, constantly, fresh carbonic acid, while, during the winter, rain and snow introduce into the soil a quantity of ammonia sufficient for the development of the leaves and blossoms."

The following table illustrates our meaning in relation to this point, by presenting the general composition of two important field products,—wheat and oats,—as ascertained by Boussingault:—

Composition.	*Wheat.*	*Oats.*
Carbon	45.50	50.70
Oxygen	43.10	36 70
Nitrogen	3.40	2.20
Hydrogen	5.70	6.40
Ash	2.30	4.00
Total	100.00	100.00

For the New England Farmer.

"AGRICULTURAL YEAST."

Doubtless every reader of the FARMER of November 17, noticed an article with the above title, and was induced by its novelty to give it a careful perusal. However earnestly they may wish all success to Mr. "K." in his investigations, there is some question whether the present generation will derive much benefit from the supposed discovery; for nearly two centuries have passed since the idea was conceived, and ten years more must elapse before the public can be initiated into the secret. Until the discoverer perfects his labors, we must toil on, dealing with things as we find them.

Now, are farmers aware that they already possess "an agricultural yeast," about which there are no patents, no secrets nor unfathomable mysteries,—a substance which, if it was regarded and treated purely as "yeast," would materially increase the productiveness of our farms. I mean just what Mr. "K." proposes to supersede—stable manure. Yes, stable manure acts like yeast in the soil, if we choose to let it.

But how does it act as yeast? All soils worth cultivating possess the elements of fertility. Now, some suppose that the tender rootlets can feed upon the coarse, insoluble particles which make up our soils, as a squirrel does upon a walnut. True, these rootlets have great power, and will make a vigorous attack upon solid substances, as is illustrated by the fibres of trees and hardy shrubs and grasses permeating and adhering to an old bone, which chances to lie near them. But before the mass of the soil is available to tender vegetation, or can be converted into plant food, certain mechanical and chemical changes must be effected. The plow, harrow, spade, hoe, frost and wind are among the agents which operate mechanically to pulverize and reduce to a powder the coarse particles. The process by which this dust or powder is made soluble is the work of chemical agents; and among them is stable manure. The excrements of animals, and all vegetable refuse, possess the power of fermentation and decomposition, and when mingled with the soil will induce similar action therein.

Of course the intensity and duration of the action depends upon the condition of both the manure and soil at the time of application. Green, coarse manure, brought to the field before any of its power is expended upon itself, is best. The atmospheric influences which promote fermentation are greatest in spring, before intense heat, drying winds and excessive evaporation prevail, and early in autumn before cold weather checks it. When all this fermenting power has been expended before its application, the manure comes to the land in a dead, passive state, and can have very little action upon it.

By thus regarding manure as yeast, it receives a twofold value; and the reason becomes apparent why some coarse, strong kinds are more beneficial to the land than equal quantities of other kinds which have a larger per cent of the elements of plants; why old, well rotted manure does not last as long as that applied in its green unfermented state.

An old farmer of great practical experience, who has expended thousands of dollars in purchasing manures of all kinds, in all stages of decomposition, told me recently that he had obtained the best results when he applied it directly from the stable, in spring, and covered it immediately. Such a course precludes dealing out homœopathic doses with shovel and spoon to every crop, and favors liberal applications spread broadcast over the land, enriching the soil rather than supplying the wants of the present crop.

With these views, the proper management of manures at the stable is simple and easy. The main point to be observed is to keep down fermentation. The bottom and sides of the manure cellar or pit should be water tight; and instead of resorting to devices to make the hogs root it over, let them tramp it as solid as they will. If this does not keep down fermentation saturate the heap with water from the eave spouts or otherwise. When planting time approaches, fork it over thoroughly, and as soon as the heap is in a state of lively fermentation it is ready for use.

Would you not compost at all? asks one. Yes, in a certain way. I would gather all I

mld of vegetation suitable for bedding; also e large quantities of the soil itself, always dapting the kind to the nature of that to which it is to be applied,—choosing muck and rich loams for fields deficient in vegetable matter; sand or a sandy loam, for a clay meadow; and clay, sand or fine gravel for a muck meadow. I would take the subsoil where it was not advisable to use top soils. It should, however, first be exposed to frost, then finely pulverized and kept dry in a place convenient to the stable. The greater comfort of the animals in always having a comfortable bed well pays for collecting these materials.

Dry dirt, which is perhaps the best deodorizer the farmer can use, quickly absorbs urine, which in warm weather soon ferments. Being saturated with urine and thoroughly mixed with the solid excrements, the dirt will be subjected to powerful fermenting influence, and be converted into good manure. The stable floor is the farmer's laboratory,—the place for compounding his "agricultural yeast;" the cellar merely a place for storage; the hogs are stevedores to pack it away.

The amount of manure that can thus be made with one cow or a horse is surprising. With a long row of cattle the quantity will soon bring a large farm into high condition.

There is no necessity for buying largely special fertilizers, at three to four cents per pound, and stable manures at five to nine dollars per cord, and hauling them as many miles, when the farm is well stocked and the requisite materials are collected and properly worked up in the laboratory. On farms of diversified soils, these materials are always near. If not upon the surface they will be found in the subsoil. The forces of nature are sufficient to form plant food out of this crude matter. The work of man is only to bring them together under favorable circumstances; and there will be a real visible "progression of the soil" in fertility, that will make his barns and granaries teem to overflowing. N. S. T.

Dec., 1866.

For the New England Farmer.

BUYING TREES---No. 2.

Only a few words need be said in relation to the comparative merits of New York trees and those grown in New England. The soil of Western New York is deep, rich and porous. It fosters a rank growth of wood, and produces large roots. The stocks of trees grown in such soil are stout, smooth and vigorous, with tops more evenly formed than those grown in New England. But they are very deficient in fibrous roots, and unless extra pains are taken in preparing the ground, making it fine and rich, their growth will be greatly retarded by transplanting. If they are set in nursery rows in a rich garden plot and permitted to remain two years before setting in the orchard, it will be found that they have made an abundance of fibrous roots and are in the best possible condition for planting.

New England trees, on the other hand, are usually diminutive in size and irregular in shape; but having been grown in a hard, unyielding soil, they have not forced large bare roots down deep into the subsoil, but a multitude of small ones have spread out horizontally from the tree, near the surface of the ground, where they receive the benefit of greater warmth from the rays of the sun, which, in our cold climate, is very essential to the success of the tree. Having made less growth of wood than the New York trees, they will be less liable to be winter killed, and having more roots, they are better prepared to withstand the shock of transplanting.

In respect to apples, the testimony is almost universal in favor of trees grown at no great distance from the locality where they are to be set for fruiting; but pears, when the trees are not injured in transportation or by undue exposure after their arrival, and having received generous cultivation, have succeeded well at great distances from their native nursery. Indeed, it is the practice of many New England nurserymen to buy small trees from the West and treat them in the manner above described.

But having said thus much in respect to the stock furnished by travelling agents, let us consider a few hints in respect to *local* dealers, or those who have a fixed place for doing business, whether it be a nursery in the country, or a salesroom in the city. They have a motive to impel them to upright dealing, which the itinerant has not. They are ambitious to build up a permanent trade in the town or city in which they have established themselves. They expect to have frequent dealings with the same persons. They understand that they are dependent upon the fruit-growers of their immediate vicinity for a permanent and profitable trade.

A tree sold under a false label will injure their future trade more than many times its value. Their recommendation of a new variety, if it prove a failure, will bring disappointment upon those upon whom they are dependent and discourage further planting.

But there are some things to be considered, even in buying of those whose honesty of purpose is unquestionable. If trees are sold from a salesroom, (as they are more and more every year in cities and large towns,) it is necessary to ascertain, by careful examination whether they have been properly protected from heat and cold, and are in a lively condition, especially at the roots; also whether the sorts are kept distinct, so that you may be positive that you are getting what you bargain for.

If you visit the nursery, observe whether the trees have been allowed sufficient space in the rows to ensure symmetry of form and an even development of limbs upon all sides; for if the top has been crowded and pinched out of shape, you may be assured that the roots will

also be cramped and unhealthy, and if the limbs cross each other and are ill-shapen they can never be reduced to a well-formed tree. Select smooth and stocky trunks, and avoid those in which the graft has failed to unite well with the stock, as such trees are liable, sooner or later, to be destroyed by violent winds. Dwarf pears are particularly liable to this fault, and there are three very popular varieties which, for this reason, ought never to be grown as dwarfs. They are the Bartlett, Flemish Beauty and Sheldon.

The principal object sought in planting dwarf trees is *early bearing*, and as the Bartlett fruits upon pear stock in three or four years from planting, there seems to be no necessity for growing it upon quince. The other two sorts spoken of are more tardy in coming into bearing, and are greatly improved, both in size and flavor, by dwarfing. These should be double worked upon quince; or, in other words, a variety should be grafted into quince which unites readily with it, and then, after an interval of one or two years, the desired sort should be grafted into this. Such trees possess a degree of hardihood and a development of fibrous roots which other trees do not.

Above all things, do not buy trees of a *careless* nurseryman. Let his intentions be ever so good, if he neglects in budding to set the proper marks against the different sorts, and also to make a legible entry upon his memorandum-book to be referred to when field marks become indistinct: or if he is not careful, in putting up his orders, to keep the sorts distinct and to have each particular tree bear its appropriate label, he does not deserve your patronage, however excellent may be his trees otherwise. An apothecary is accountable for failing to put the proper label upon the article he sells, and it is generally admitted to be a wise and necessary requirement. Perhaps it would not be unjust to place the nurseryman under the same obligation, for next to having swallowed an unwholesome drug, what greater disappointment than to have carefully nursed a supposed Doyenne du Comice for many years, only to see it bring forth a worthless Catillac? Or like my unfortunate neighbor, to pay fancy prices for Iona and Adirondack grape vines, in anticipation of the honor of being first to exhibit specimens of the fruit at the annual fair, and after careful cultivation for three years, during which time others had obtained a good start with genuine vines, to find that all this care had been wasted upon the unpresuming Hartford Prolific? G. A. A.

Worcester, Mass., Dec., 1866.

For the New England Farmer.

WHY THE BEES WERE LOST.

I notice, in the FARMER of January 5th, a communication over the signature of "C.," inquiring for information about a hive of bees he had last spring which swarmed on the 8th of July, and after flying some time returned to the hive, and in eight days more swarmed again, but neither the old nor new swarm did well afterwards. In reply to "C." I would say, that in all probability when the bees first came from the hive, the old queen, in attempting to fly with the swarm, dropped to the ground, owing to some defect in her wings, and was neither able to rise nor return to the hive. The swarm circled round awhile and finding no queen, came back and was obliged to stop till a new queen was hatched. That your bees did not do well was owing to the poor season for honey-making, throughout New England. It would have been better for your bees if they had not swarmed, for one strong swarm is worth any number of weak ones. Your old swarm died out owing to the fact that their new queen never became fertile, or she, too, was lost when she left the hive to meet the drones. The remaining bees in the hive died of old age; for the life of no worker bee is longer than eight months, and if they lose their queen and have no eggs to make another, or you have no queen to give them in that time, the swarm ceases to exist.

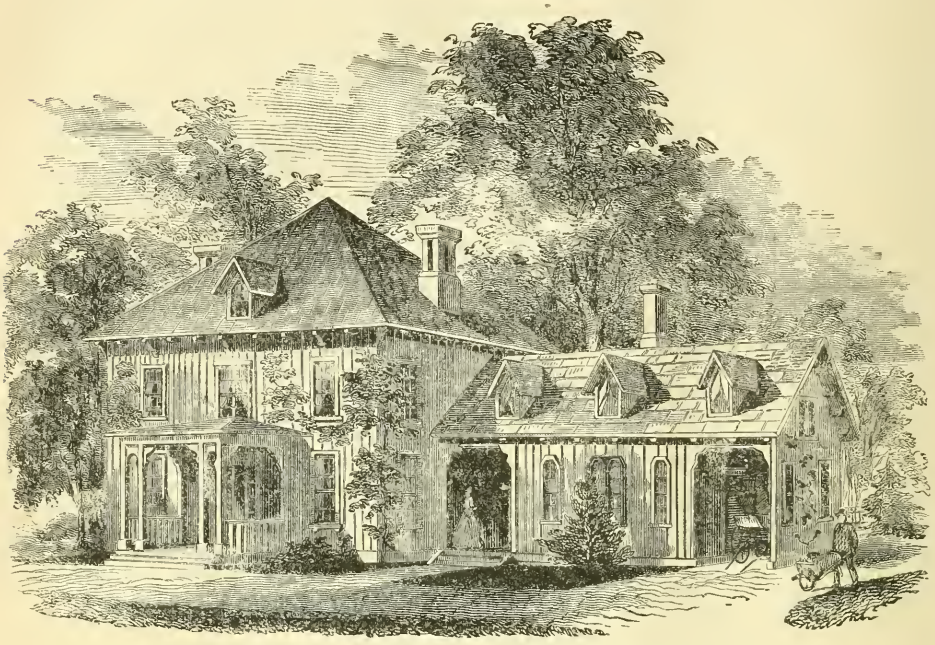
I have one hundred and fifty swarms on the Sacramento River in California, and I never allow them to swarm. I find that division is much the best way for me to pursue. I lose no swarms and keep them strong all the time.

There will probably be a great loss of bees in New England, this winter and spring, unless considerable attention is paid to them. They should be continually fed from the last of February till they are able to supply themselves from other sources. After they commence breeding they will consume honey much faster than through the months of December and January. I am now wintering through a small colony of Italian bees, containing about one pint of bees, and I find no trouble in keeping them all right thus far, through this cold season, but I manage them entirely different from most bee keepers in this section of country.

S. W. GREENE.

Salisbury, N. H., Jan. 7, 1867.

TOMATOES A PROTECTION AGAINST BORERS.—Mr. H. J. Foster, of Quincy, Mass., informs us that he has an apple orchard which has been badly infested by the borer. Two or three years ago while going over the orchard in the fall and removing from ten to fifteen young borers from most of the trees, he noticed that invariably there were no signs of their work to be discovered wherever a chance plant of the tomato had sprung up from seed in soil or manure. Acting on this discovery, he has since planted tomatoes extensively about his apple trees and quince bushes, and finds it a complete protection, as the beetle which deposits her eggs during the summer months upon the bark of the tree near the ground, shuns every tree near which a tomato plant is growing.

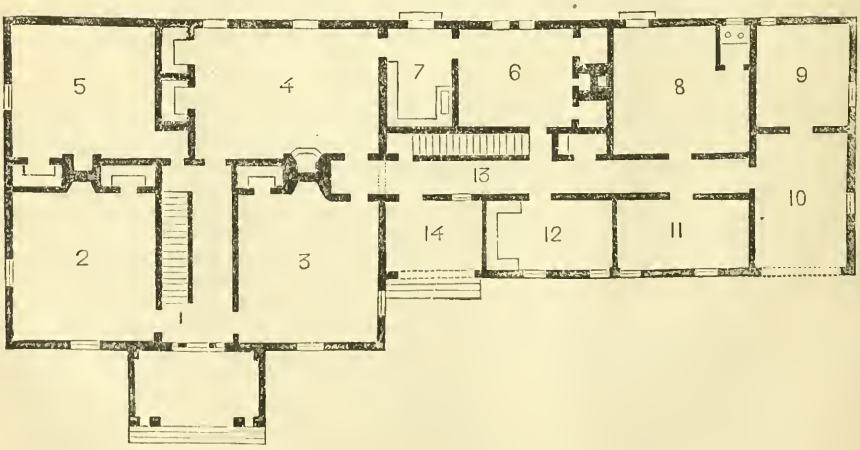


DESIGN FOR A COMPLETE FARM-HOUSE.

Of the above design, which was furnished for the New England Farmer by Mr. G. E. Harney, the following explanation is furnished by the artist himself:—

When we speak of a *complete* farm-house, our country friends fancy to themselves a dwelling that shall contain every convenience necessary for the carrying on of the household portion of the farm labor; at least such is the idea we have of it, and in the composition of the present design, we have endeavored to supply those conveniences.

There is nothing at all showy about the house, either in design or plan; it is a plain, substantial farm-house, nearly square, with a large L on one side—our aim being to insure convenience even at the expense of ornament—though, we think, after the house has become two or three years old, and brightly flowering vines begin to cover its sides, and trees to throw their shadows upon it, that it will have



a cosy, comfortable, home-like appearance, quite in contrast with the *shingle palaces* of late so fashionable among us.

Our plan comprises the following accommodation: No. 1, hall 7 feet 8 inches by 19 feet, opening into No. 2, parlor, 15 feet by 16; No. 5, bed-room, 15 feet square; No. 3, living-room, also 15 by 16 feet, opening into a back entry, No. 13, and across it into the kitchen, No. 4, 15 feet by 20; this kitchen contains two large closets and connects with a pantry, No. 7, which measures 7 feet by 10, and is fitted up with a sink and shelves. The next room *en suite* is the back kitchen and wash-rooms; it contains two closets, a large oven and boiler, and measures 16 feet by 12; it opens into the back entry, through which we pass to the wood-room, No. 8, 14 feet by 15; No. 10, carriage shed, and No. 9, work shop. The back entry is 4 feet wide, and contains stairs to the chambers and cellar. On the front, doors open into the dairy, No. 11, 7 feet by 14; the store-room, No. 12, 7 feet by 13, and upon the sheltered porch, No. 14.

The second floor contains eight chambers, besides bathing-room, dressing-rooms and closets. The attics may be left unfinished.

Construction.—This house may be built of wood, and covered in the common manner with clapboards.

The roof of the main house projects 2½ feet, and that of the L, 1½ feet; the cornices are supported in brackets 3 inches thick. The windows and doors, inside and outside, have plain architraves, 5 inches wide.

Cost in New England, at prices previous to the late war, about $3500.

FARMER'S WIVES.

The reading of essays by the ladies is one of the exercises which give life and interest to the meetings of the Springfield, Vt., Farmer's Club. From one of the essays by Mrs. Daniel Rice, published in the *Vermont Farmer*, we copy the following paragraphs:

Did you ever think of the amount of thought requisite to *plan* three meals a day for three hundred and sixty-five days in succession? To prepare enough and not too much, and for those living at a distance from the village, to remember that the stock of flour, sugar, tea, etc., etc., is replenished in due time? Do you ever think of the *multitude* of her cares and duties? She must rise early to prepare breakfast or oversee it. Perhaps there are children to wash, dress, and feed, or to get ready for school with their dinners. There is baking, sweeping, dusting, making beds, lunch for the men, may be—dinner and supper to be made ready at the proper time—the washing, starching, folding, and ironing of clothes—the care of milk, including the making of butter and cheese—and the inevitable washing of dishes. In autumn there is the additional work of picking, preserving, canning of fruit, drying apples, boiling cider, making apple sauce, with the still more unpleasant task which falls to her lot at butchering time. Then there is haying, harvesting, sheep-shearing, etc., when more help is needed, bringing an increase of her labors. Twice a year comes house-cleaning. By the way, of all the foes a housekeeper has to contend with, *dirt* is the greatest. She may gain a complete victory and think to repose upon her laurels after her semi-annual engagements—but it is only temporary. The enemy soon returns, and even daily skirmishing does not keep it at bay.

There is the *mending* too. Sewing machines are great blessings, but they can't set in a patch or darn the stockings. I do not mention these things by way of complaining of woman's lot in general, or asking for her any rights which she does not possess. I don't know as there is any remedy in the present state of the world. It seems to be one of the evils of life which must be borne as we bear other ills—but what I do ask is a due appreciation of the important part that woman acts and a concession that her labors, mental and physical, are as great, all things considered, as those of the other sex. Women are not so childish that a little sympathy now and then or acknowledgment of their efforts and sacrifices makes them imagine their case worse than it is. I tell you, men and husbands, "It doeth good like a medicine," and many a poor, crushed, broken-down wife and mother is dying for want of it.

For the New England Farmer.

THE EIGHT HOUR SYSTEM OF LABOR.---No. II.

We have seen that the reduction of the hours of labor one-fifth, will be equivalent, so far as the employers are concerned, to raising wages one-fifth. This is unquestionably the chief object of the agitators of this question. They expect, if they succeed, to obtain the same renumeration for eight hours' labor which they now receive for ten.

But if the profits arising from hired labor are to be reduced one-fifth, how will this effect agriculture? who will be able to undertake any more farming than he can do with his own hands?

Nature has provided long days and many hours of sunlight during the growing season, to hasten forward the growth of vegetation, and to enable the farmer to cultivate and harvest his crops,—thus indicating that more hours are to be spent in labor at that season than in those portions of the year when the facilities for labor are more limited. These portions we occupy largely in consuming the products of the summer, and may improve them for the purposes of intellectual culture, and social enjoyment. Nature thus points out to the husbandman that he should employ the long hours she has provided for him, in cultivating the earth and aiding the growth of vegetation and secur-

ing the products. While the vegetable world sleeps, and the earth is preparing for a new effort she has afforded him less time and fewer facilities for labor, thus showing that it is less necessary. While the earth rests, its cultivators may rest also.

In a warmer climate, and with a richer soil, it is possible that a sufficient supply of food may be produced by the labor of eight or even six hours. But in our rugged clime, and on our hard soil, if we would develop the capacities of our soil, and compete with soils that are better, we must, like the busy bee,

"Improve each shining hour,
And gather honey all the day."

The hours of labor are already reduced to the narrowest limits within which farming by hired labor is sufficiently profitable to induce men to engage in it. A large portion of our enterprising young men refuse to work the soil even now, and with the certainty of still less profit, more of them will seek other employments, or other climes. The only possible way of successful farming will be to let out our work by the job, or on shares, and then we shall find that the foreign laborers who are now so clamorous for an eight hour system, will labor ten or twelve hours without complaint.

The idea that laboring men will cultivate their minds, and thus elevate their social position by laboring two hours less in a day, has but little weight in my mind. Those who have passed the period of youth would not do it, if they labored four or six hours less. Young men who are disposed to improve themselves, and who aspire to distinction, under the present system of ten hours labor, with their four or five hours of leisure, with their holidays and sabbaths, and the evening schools and lectures, and the abundance of books within their reach, can do it now. Such young laboring men in this country, from the days of Benjamin Franklin to those of Abraham Lincoln, have done it, and that they are still doing it, I will call Nathaniel P. Banks, George S. Boutwell and Ginery Twitchell to testify. The resolute purpose and the vigorous habits with which such young men apply themselves to the acquisition of knowledge often enable them to outstrip those who have had earlier and better opportunities. These men are the exceptions. They urge their way onward and upward, "moved by the Divinity that stirs within them." But on the other hand, how few of our young men attain distinction, even with all the advantages of our high schools and colleges, and with the advantage, if it be an advantage, of not being compelled to labor at all in early life? If so large a proportion of these fail, under such circumstances, is it reasonable to expect that the mass of young laboring men will succeed by being relieved from a fifth part of their daily labor?

Young men break down in health much oftener from intellectual than from physical labor. I have known the health of many men destroyed by excessive study; but I have known but few men whose health has failed from excessive labor, and in the few cases that I have known, labor has been accompanied with reckless exposure to the vicissitudes of the weather. I cannot recall a single instance in which the health of a hired laborer has thus failed from excessive labor. In every instance it has been some ambitious young man who was at work for himself, and whose efforts were greater and longer continued than his constitution could endure.

I might enquire how this proposed change would affect various kinds of labor, as for instance, how would it affect the dairyman whose cows require to be milked twice a day? Would both milkings come within the eight hours, and the cows be left unmilked the remaining sixteen? How would it operate with the gardener who stirs the earth around his flowers and tender plants while it is still moist with dew, and transplants in the early morn and protects his plants from the scorching rays of the sun, or still better, at dewy eve? The poetry and fragrance of the garden would both be lost. How will it affect the marketman, who must be in at the opening market, and who now spends eighteen or twenty hours in going to and returning from market? And how about the female help? Why should not their hours of labor be reduced in the family as well as in the mill, and as well as the hours of labor of the men? This would require a change in our whole domestic economy. We should get our breakfast at nine o'clock, and our evening meal at four or five. Perhaps we might soon learn to save one meal, and thus find it an economical arrangement. I might make similar enquires with regard to various other kinds of labor, as that of printers, clerks, hostlers, employees on railroads, bakers, &c., &c. But I think this is sufficient.

The laws of the State secure to labor, especially to mechanical labor, its reward, by giving it a lien upon its products, for security. It also provides most liberally for the education of the children of all laborers. But the very persons who make the loudest demand for the reduction of the hours of labor will not allow their children to avail themselves of the opportunities provided at so great expense, but will keep them employed in the mill nine months in the year, from the time they are ten or twelve years old, and many of them would keep them so employed all the year if the mill owners were not forbidden by law so to employ them. The Legislature of last winter enacted a wise law on this subject, which forbids any child under fourteen years old to be employed in a factory unless it attends school six months in the year, and subjects the mill-owner who employs any such child who has not attended school six months in a year, to a penalty of fifty dollars for each offence. This law will do more in the future to elevate the condition of labor in this commonwealth, than any re-

duction of the hours of daily labor. Experience and common sense will be found safer guides with respect to the hours of labor, than legislation. R.

Concord, Mass., Jan. 1, 1867.

UNFERMENTED MANURE.—Many excellent farmers have an idea that manure to be most efficient in raising crops should be well-rotted; but this is a mistake. Manure loses a very heavy percentage of its real value by decomposition. Fresh manure dripping with animal urine hauled directly from the stable on to the land and plowed under, is worth nearly double that which has decomposed to a saponaceous consistence. When it is convenient for farmers to haul their manure on corn-ground from the stable as fast as it is made, it saves handling it twice, and forwards the work in busy spring time. No fears need be entertained that the atmosphere will carry off the strength of the manure if left on the surface. The only danger to be apprehended by this method will be in case of the ground being frozen and covered with snow or ice when the manure is applied; if upon sloping land the virtue of the manure might wash away; but on level land there is no exception to this plan of operation during the entire fall and winter season.—*Germantown Telegraph.*

EXTRACTS AND REPLIES.

FLOUR OF BONE.

The following "extracts" relating to the different effects of bone in the same town, tend to show that, as "one swallow does not make a summer," so one experiment should not be taken as decisive of the value of any particular fertilizer.

I purchased one barrel of flour of bone for $10.50, and having used it to the best of my ability the past year, must say, as the result of my experience, that I prefer wood ashes, measure for measure. A. TABER.

Holliston, Mass., Jan. 2, 1867.

I made use of flour of bone on some turnips (Peruvian,) applying one large spoonful for each plant, standing in rows about eighteen inches apart. On each alternate row I did not put anything. The result was, that in the rows where the flour of bone was applied there was a large yield, the turnips weighing eight, twelve and even eighteen pounds apiece; while in the rows not boned they were very small, and a light yield. On another piece of land, after taking off a crop of early peas, I sowed turnips, and to one-half of the piece applied flour of bone. On that part there was a rank growth, on the other part they were very small. I think flour of bone pays very well on turnips; and the Peruvian to be one of the best varieties.

AARON BRIGHAM.

Holliston, Mass., January 5, 1867.

BROOMS AND MOP-HANDLES.

The FARMER of January 5th, in speaking of farm implements, says it is poor policy to use those already worn out, or so illy constructed as to be used with great loss of time and strength.

May I be allowed a word concerning the implements daily used in a farmer's kitchen? Much inventive skill and mechanical ingenuity have been expended upon washing machines, wringers, the sewing machines, &c., but no one seems to dream that those things oftenest used are susceptible of improvement. I refer to brooms and mop-handles. Compare these short, stiff, crooked, rough, clumsy articles with the handles of rakes, pitchforks, hoes, &c., made for men's use,—all of suitable material, proper length and size, smoothly turned and nicely sand-papered as they are, and should be.

It is said that a demand will create a supply. Hoping this will not prove an exception to the rule, I ask, in behalf of farmers' wives and daughters, especially, for an improvement in these indispensable articles. And when they are properly made, please don't spoil them with varnish or paint; sand paper is sufficient finish. We want greater length, less size, and a better quality of material. Less sharp corners, less bits of bark left upon them might facilitate their use and tend to keep our hands in better condition to care for the sick, to bind up wounds and sores, and to handle the needle in the hours that must be devoted to the family wardrobe. If the broom-makers will use only good brush, we will gladly pay enough more to enable them to throw away the poor and make fewer in number. A SUFFERER.

Guilford Centre, Vt., Jan., 1867.

REMARKS.—The farming implements that must be purchased in these days cost so much that many farmers feel, as they "sit down and count the cost," that they must save somewhere. And altogether too often this "get-along-for-this-year" economy falls upon the household conveniences. We once saw a Yankee woman, who cooked potatoes for her hogs as well as for her husband, lugging them out of the cellar in a sap-tub without any contrivance for a bail, for want of a light, convenient basket. We didn't see her mop-handles.

EFFECTS OF BONE.

MR. EDITOR:—I see by late numbers of the FARMER that there is some dissatisfaction with the results of experiments with the flour of bone. Being unacquainted with this peculiar fertilizer I cannot speak from my knowledge of its effects. But I have for many years given my attention to the cultivation of the soil, and have carefully watched the operation of different manures, both on the soil and the crops, and have come to the conclusion that there is no single fertilizer that is a sure specific for a good crop on all soils and under all circumstances.

I have believed that one of the greatest losses that the farmer suffered, and one which it was most difficult for him to replace, was *bone*. Are farmers aware of the amount of bone or phosphate that is taken from the soil by a single crop? How is it to be restored again? Could we obtain bone in quantities sufficient, and at living prices, I should have no fears of my farm becoming exhausted. It is said that a good cow takes off about 75 pounds of bone in each year in her milk, besides the bones of all animals that are sold from the farm. This repeated for years, and the result is "white-top" in our pastures.

I have used a good deal of plaster, and its operation is a little singular. On some pieces it has showed immediate effects; at other times it takes longer for it to operate. In one instance it did not develop itself till the third and fourth year; but it held out good till the seventh, when I plowed it up. That was last fall, and it remains to be seen what it will do in future. I have known many cases where the soil has been manured well with barn-

yard manure until it seemed to have no effect on the crops, because, as I supposed, a small quantity of some material was wanted. My opinion would be that bone simply ground, would not, in most seasons, be likely to be taken up by the plants in the first year. Again a soil may have enough of this material, but be deficient in something else. Where the white-top flourishes, however, I think its effect must be highly beneficial.

In my view, as valuable a material as bone ground fine should not be condemned on a trial of one, two or three years, for plants certainly cannot take it up till it is dissolved and has time to produce its full chemical effect on the soil and crop. H.

Epping, N. H., Jan., 1867.

PROFIT OF POULTRY AND PIGS.

The following is my experience for the year 1866, ending December 31st, in raising in a small way pigs and poultry. I have kept an exact account of the expenditures and receipts, as a mere matter of curiosity to myself, and perhaps your readers may be instructed or amused by its perusal, and then judge for themselves between pigs and poultry.

In Jan., 1866, I purchased 44 hens, at 50c each . .		$22.00
Fed to them during the year corn amounting to .		48.00
Total expense		$70.00
I sold eggs amounting to	$74.73	
Poultry	49.15	
44 hens and chickens on hand	22.00	$145.88
Leaving a balance in my favor of		$75.88

My hens had no extra or particular care. They had the run of my stable and yard attached to the same; that was all.

Now for the pigs:

In July, 1866, I bought a sow pig and paid for it .		$20.00
Fed to it and the pigs, at the end of 4 mos., corn .		20.00
Total expense		$40.00
I then killed the sow and sold it for . .	$40.00	
Sold 4 of her pigs in the summer for . .	20.00	
I have now 4 pigs worth $10 each	40.00	$100.00
Leaving, for the 4 months, balance in my favor .		$ 60.00

I estimate that the manure made by the pigs is worth the care of feeding them.

Moses Eaton, Jr.

South Hampton, N. H., Jan. 5, 1867.

Remarks.—The above is a workmanlike statement, and we thank the writer for the communication.

THE BUTTER REMEDY FOR A FILM.

While sitting by my warm freestone stove, this fifth of January evening, what should come upon my table, with other welcome mail matter, but your enlarged and most acceptable weekly, and the almost forgotten—no! not forgotten; for I can't forget your Monthly, so long as it is my most constant book for reference. Staunch friends, both of them, and I only wish you the patronage you deserve! Then you would need an office as large as Faneuil Hall! But I will not dwell on these topics, though pleasant it is to me, and perhaps gratifying to you. I will say, however, that the Farmer always comes to me as an old, tried and fast friend. May its shadow never be less.

Allow me, right here, to make a suggestion. In your caution to discountenance all humbugs and impositions, please be cautious how you condemn a good thing. Some things recommended by practical men may appear absurd at first sight, yet there is truth at the bottom. You refer in a note to a statement in the *Tribune* about putting fresh butter in animals' ears, to take a film from the opposite eye, and characterise it as "one of the barbarous methods which are sometimes resorted to in the treatment of cattle diseases." I read the notice in the *Tribune* with much interest, as I happen to know something of the use of the remedy. I should say, myself, considering the quantity there recommended, there was a little look of barbarism. But permit me to step right into the ring and defend the fresh-butter remedy, only in a milder way. The remedy was used by my father, as long ago as I can remember. Some thirty-five years ago the pet house dog, old Prince, the pet of us youngsters, got his eye hurt in the woods by a stick switching into it. I remember it well, for I was then a lover of the dog, as most boys are, and we feared the old fellow would be blind. There being no fresh butter in the house, some cream was put into a bottle and shaken till it produced butter. A piece twice as large as a marrow-fat pea was partially melted and put into the ear opposite the affected eye. In a few days the film disappeared, to our great joy. From that time, it became the universal remedy in that vicinity. I have used it many times, and *it never has failed.*

Some few years since, the eye of a colt I was driving, got injured, became inflamed, and finally a film appeared, and was spreading rapidly over the eye-ball. Happening to be in the company of a veterinary surgeon, I submitted the case to him. He said it was a serious injury, and he would take the case in hand for ten dollars. I did not engage him, but decided to try the butter. I did so, and in a few days the eye was all right. A piece as large as a walnut is sufficient for an ox or a horse. I do not remember ever being under the necessity of giving the second dose. Judging from my own experience, it is a *mild and sure remedy.*

Weare, N. H., Jan., 1867. Z. Breed.

WHY THE BOYS DISLIKE FARMING.

I have seen the question asked in the Farmer several times, Why do our young men have so little taste for farming? I've seen several replies, but no satisfactory ones. Though young and not used to being in print, I venture to offer what, in my opinion, is the true cause. First, a great many boys take no interest in their work because there is nothing to interest them. A farmer's boy is most generally called up before daylight and set to work, hurried through with his meals, and, apparently forgetting that he is a boy, he is kept to work year after year till he arrives at manhood. Now, is there any wonder that a boy gets disgusted with farm life, and longs for the time that shall free him from it? What, then, must be done to obviate this difficulty? If a boy is happy and contented at home, he will never wish to leave when he arrives at manhood; for, if his home is what it should be, it will be to him the happiest spot on earth. To cultivate a love for farming, boys must have something they can call their own. Let them have a sheep, a few hens, or a piece of ground to cultivate for themselves, and above all remember that

All work and no play makes Jack a dull boy.

And now I think if these rules are well observed our farmers will have no cause to ask why our young men leave for the city. Chiel.

Shelburne, Mass., Jan. 5, 1867.

BOG AND BLOOD SPAVIN.

Bog spavin owes its origin to hard work in early life. It commonly comes in the ham, and is caused by the joint oil of the hock issuing into the membrane that surrounds it, and stagnating under the

vein, causes it to swell. Prick the swelling, but take special care and not injure the nervous cord, as this may bring on the lockjaw. Upon opening the swelling you will find a gelatinous humor to issue from it. Now apply a turnip poultice for a few days, to draw out the humors, and then strengthen the part by bathing it in good brandy. Blood spavin is caused by a vein being ruptured; the blood extravasates, and forms a protuberance. The following remedies are good for bog spavin or blood spavin:

Take a strong mixture of copperas and vinegar, with which rub the parts affected, keeping the horse dry, and stirring him only enough for exercise.

Take about a pailful of urine, into which throw a quantity (the more the better,) of old rusty iron; put the vessel near a fire and let it stand three or four days, stirring it occasionally, when it will be fit for use. Apply this mixture twice a day, and in all cases it will soon effect a radical cure, or prove highly beneficial. S. E. F.

Monkton, Vt., Dec. 24, 1866.

POTATO WATER FOR CHAPPED HANDS AND SWELLED UDDERS.

It is very provoking when I would like to write, to find the ink frozen. I was going to tell of a very simple yet efficacious remedy for chapped hands. It is to wash them frequently in potato water, or the water in which potatoes have been boiled. A few months ago we had a heifer with the udder very badly swollen and quite hard. Several remedies had been tried without success, when I tried bathing it in potato-water and it was completely cured by a few applications. Mrs. ———.

North Andover, Mass., Jan., 1867.

Remarks.—We are very glad that Mrs. ——— had the patience to thaw out her ink, and hope that others will find her remedy equally efficacious.

CARROTS FOR WINTER BUTTER.

In your last week's paper you gave a very interesting account of making butter in the winter. It is worth the price of the paper for one year to many a new housekeeper. Our method of making butter is the same as yours, with one exception. We grate up two or three orange carrots, put them into one quart of milk, then strain and put it into the cream. The butter will look like fall butter, and we think it adds to its flavor. Please try it, and report in your valuable paper.

A Young Farmer.

Goshen, Vt., Dec. 26, 1866.

AGRICULTURAL ITEMS.

—Hon. Andrew D. White, of Syracuse has been chosen President of the New York Agricultural College, known as Cornell University.

—Dr. Boynton mentions five square feet as the smallest proper allowance of space for each sheep in its winter quarters.

—Fourteen thousand bushels of apples have been shipped from Burlington, Iowa, the present season, valued at $42,000.

—"Be thou diligent to know the state of thy flocks, and look well after thy herds, for riches are not forever."'

—A young man recently wrote to Mr. Horace Greeley to use his influence in obtaining a situation for him. He received the following reply:—"New York is just entering upon the interesting process of starving out 200,000 people whom war and irredeemable paper have driven hither. It is impossible to receive and employ more till these are gone."

—The two-year-old South Down wether that took the first prize at the last N. Y. State Fair was recently killed and weighed, when dressed, 125 pounds.

—Two correspondents of the *Rural American* say that a few seeds of the *Palma Christi*, or castor bean, scattered about their haunts, will destroy ground moles.

—Success to all Labor,
For toil is man's fate,
And 'tis laboring men only
That can build up our State.

—The Frankville, Ohio, *Pioneer* says there is now living in Sandusky, in that State, a farmer named Matthias Bateman, who, having been born in 1755, is 111 years old. He is quite active yet.

—Roots or grain should be fed to sheep some distance from their pens, says Dr. Boynton, that should they be compelled to get some vigorous exercise in running to and from their feed.

—Mr. Van Alstine, of Columbia county, N. Y., says that with him the best ripened grapes are grown on a clay or slaty soil. On sandy loam he had never succeeded in producing well-ripened grapes; too much wood is grown.

—In consequence of the sanitary measures which were adopted last summer at St. Louis, to prohibit the sale of fruits and vegetables, in consequence of of cholera, large numbers of grapes were suffered to rot upon the vines and ground.

—A Milwaukee paper tells of a butcher in that city who killed a cow, a few days since, and found a live mud-turtle in her stomach. The shell was much eaten by the acid of the stomach, and the turtle lived but a few hours after its release.

—D. C. Comstock, of the U. S. army, writes to the New York *Tribune* that he has seen acres of wild hops, superior to those in some of the Eastern States, growing on the Rio Miembres, the Pecos, and the Rio Bonito rivers in New Mexico.

—Charles A. Peabody, Columbus, Ga., after ten years' experimenting, has succeeded in producing an improved variety of long-staple upland cotton, which for thread manufacturers has been found worth double that of the ordinary upland cotton.

—A correspondent of the New England Farmer writes that six or seven acres of meadow, in the town of Essex, Ct., were prepared and stocked with cranberry plants four or five years ago. This last fall eight hundred bushels of cranberries were gathered on this patch.

—Every flock of sheep in Texas, says Dr. Boynton, must have a shepherd, or the wolves would soon have the better part. Each flock must also be yarded at night, in a wolf-proof pen. A moon

light serenade from those shaggy sheep-hunters is not at all uncommon.

—The late Mr. Eli Keller, of Newark, Ohio, a highly successful breeder of Merino sheep, it is said, never kept a written record of his sheep but was able to give the pedigree of each sheep in a flock of 150, and could remember the form and peculiarities of a sheep for years after he had seen it.

—Butter at St. Albans, Vt., Jan. 4th, was worth from 25 to 38 cents per lb., with a few extra lots at 38 to 40 cents. The St. Albans, Vt., *Messenger* says that B. F. Van Vleet, of Shelburn, sold recently to L. G. Wright, of Weybridge, Vt., 22 head of sheep for $1,500. They leave Shelburn for Ohio this week.

—Honey, like most vegetable products, should be fresh every year. It may easily be kept from one season to another; but when kept beyond that time, unless very carefully stored in a warm temperature, it will crystallize in the comb, and it is liable to ferment when in jars separated from the comb.

—A farmer in Medford, New Jersey, has about one hundred acres planted in cranberries, twenty of which were in fruit last year, and yielded an average of one hundred bushels per acre; in all, two thousand bushels, which brought him, clear of all expenses, $3 per bushel, amounting to $6000 from the twenty acres in bearing.

—The Massachusetts Board of Agriculture have appointed a committee consisting of Messrs. Stedman of Chicopee, Prof. Chadbourne and Prof. Agassiz, to report to the next annual meeting some system by which the Board may collect and embody statistical information relative to the propagation of domestic animals.

—Mr. Pardee, of Illinois, has found that lime slaked in salt brine, sown broadcast, had kept insects from strawberries.

—Minnesota has become a great wheat-producing country, and during the past season has exported over five million bushels, besides that required for the consumption of her own people.

—As curculios prefer plums to any other fruit, the peach growers of Southern Illinois protect their fruit by planting plum trees among their peaches.

—Mr. Colby of Southern Illinois has invented a machine for catching curculios by horse power. It is simply an extension of the hand sheet and jarring process. Two men and two boys can visit 1000 trees per hour.

—An ingenious mechanic a native of New England, has invented a process by which the enamel can be removed from the fibre of the milk-weed. The fibre then becomes equal to cotton—soft, silky, and of great strength. Cloth made from it is stronger than that from any material now known.

—Mr. McClay stated at a late meeting of the Southern Illinois Fruit Growers' Association, that he had known peaches perfectly colorless on account of having been mulched. He objected to sawdust, believing it generates fungi.

—There have been shipped from Quincy, Ill., the past year, between 45,000 and 48,000 barrels of apples, which sold at an average of $3 per barrel. The barrels were new, and made at Quincy, at 60c each. About 80 cents per bushel were paid to the growers.

—The following rule for ascertaining the number of bushels of apples, potatoes, &c., in bins and boxes, is recommended as simple and accurate by a correspondent of the *Mirror and Farmer:* for the number of "even" bushels, multiply the number of cubic feet in the bin by 8 and point off one decimal. For "heaped" bushels, multiply by 8 twice and point off two.

—The sticky or gummy condition of some of the cheaper kinds of curried leather and its liability to crack is said to be owing to the use of fish oil in the finishing. Neat's-foot oil being the product of the bouvine species, seems to be naturally adapted to the tanned skin, and the evils alluded to have only appeared where other oils have been substituted by the currier.

—S. P. Snow, of Blakesburgh, Iowa, uses a cheap corn sheller. Bore an inch and a half hole through a two-inch plank; put legs to the plank, making a stool of it about as high as a chair. Over the hole in the plank firmly nail a plate of iron about an eighth of an inch in thickness, and with a hole through the center of the plate, just large enough to admit the passage of a corn cob. Through this hole, with a small wooden mallet the ears of corn are to be driven. This machine, simple as it is, will shell very clean, and with double or triple the expedition of hand-shelling.

—Congress is told by the Memorial of the Vermont Wool-growers, drawn up by Hon. J. W. Colburn, that "the present rates of duty upon wool are totally inadequate to the protection of the American growth and are rapidly tending to break down this production, and build up our foreign rivals, by enabling them, aided as they are by climatic advantages, cheap lands, and cheap labor, to monopolize our own markets, to the exclusion of ourselves, thus leaving our own clips upon our hands, while we are obliged to clothe ourselves and families with fabrics made from foreign wool, and at much higher prices (induced by internal taxation) than formerly, when we held a fair competition in our own markets."

—Daniel Miller, Piercetoп, Ind., writes to the New York Farmer's Club, that for two years past farming in Northern Indiana and Southern Michigan, has been carried on under great discouragements, owing mainly to bad weather; and some crops have been total losses. Hence farmers are uneasy, they cannot pay high wages, improvements are suspended, and some seek other business. This is the reason why cities and towns grow so fast,

and there it is almost impossible to find a vacant house. Another cause of discouragement are the high prices which the farmer has to pay for everything he buys.

—Mr. Taber of the New York *Tribune*, makes the following statement as to the cost of keeping a cow during the month of December, last. He bought what he considered the cheapest food, and gave her what she would eat up clean. The record stands:—

310 lb hay, at $1.50	$4 65
150 lb buckwheat bran, at $1.10	1 65
121 lb wheat bran, No. 3, at $2.00	2 42
1½ bbls. turnips, at $1.00	1 50
Cartages	1 00
Total	$11 22

The cow is of medium size, comes in in May, hence only gives a small amount of milk, still the 134 quarts obtained were sold at twelve cents per quart at the house, or for $16.08, leaving a profit of nearly $5. Another cow furnished milk for the family. At one time he gave her the buckwheat bran freely, but she did not thrive as well upon it, nor was the average supply of milk kept up. The hay was all cut and the other feed mixed with it, wetting the mess.

MASSACHUSETTS SOCIETIES.

The Hampshire, Franklin, and Hampden Agricultural Society, at its annual meeting held at Northampton, January 2, elected the following officers:—President, Milo J. Smith, Northampton; Vice Presidents, Elnathan Graves, Williamsburg; Andrew T. Judd, South Hadley; Rodney Smith, Hadley; J. W. Hubbard, Northampton; Secretary, A. Perry Peck, Northampton; Treasurer, H. K. Starkweather, Northampton; Auditor, Oscar Edwards, Northampton; Delegate to the Board of Agriculture, H. S. Porter, Hatfield.

The Berkshire Agricultural Society held its annual meeting in Pittsfield, Jan. 2, and elected the following board of officers:—John L. Cole, Williamstown, President; H. M. Peirson, Pittsfield, Treasurer; John E. Merrill, Pittsfield, Secretary. Alexander Hyde, of Lee, was elected delegate to the State Board of Agriculture.

The Hampden Co. Agricultural Society, at its recent annual meeting, elected the following officers:—President, George Dwight, Springfield; Secretary, J. N. Bagg, West Springfield; Treasurer, Jos. E. Russell, Springfield.

The Agricultural Committee of the Legislature is composed, on the part of the Senate, of Hon. E. H. Sawyer, of Easthampton, and Hon. Hinsdale Smith, of Agawam. On the part of the House, Dr. George B. Loring, of Salem; Hon. Levi Stockbridge, of Hadley; Col. Daniel Needham, of Groton; A. H. Holland, of Barre, and John E. Merrill, of Pittsfield

Adaptation of Farm Buildings.—The *Prairie Farmer* says that many farmers on the prairies are raising up their buildings. As originally constructed they not only present a *squat* appearance, but being generally placed too near the ground, and without proper stone or brick underpinning, the sills and other lower timbers are found to rot very rapidly. Among the suggestions which the writer makes to those who are altering over old buildings, or erecting new ones, we think the following applicable not only to the farms of the prairies in Illinois, but to those on the hills and in the vales of New England:—

As a general thing, our books and our architects are at fault in regard to farm buildings. We have a new condition of things that changes the whole system of farm barns. The hay fork, the annual cost of material, especially shingles and nails, the railway horse-power, the feed-mills and the enhanced prices of corn and of farm labor to do this muscular work, cheapness, durability and adaptation must be more thoroughly studied.

STATE REFORM SCHOOL.

We have before us the 20th Annual Report of the Trustees of the State Reform School, at Westboro'. From the statements made we should think the institution has been doing a good work. We take the following items from the report:—

The Trustees have long felt the desirableness of turning as much of the labor of the boys as possible to agricultural pursuits, and especially to gardening, and have, therefore, been yearly extending the grounds devoted to this purpose, and raising thereon a large variety of vegetables and small fruits. We have a tract of about forty acres of plain land, easy to cultivate, and admirably adapted to this purpose; and we have now a vegetable and fruit garden of about thirty acres, which, we think, will compare favorably with any garden of its size in the country.

We are convinced by experience that boys placed with farmers in the country are almost certain to do well, and if not disturbed by their parents, they generally become steady, respectable men; while those placed in large towns and cities are about equally sure to return to their former evil habits. By employing our boys in gardening, we gradually form in them

a love for such labors, and, at the same time we prepare them to be useful at once to the farmers with whom we so much desire to place them.

In common with others, we have been severely troubled during a part of the past year by the prevailing disease of cholera among our swine, brought in by animals purchased at Brighton, causing the death of upwards of sixty hogs and pigs, and compelling us, in order to avoid the infection, to remove our piggery to a new location; thus requiring an outlay of about a thousand dollars for removal and necessary repairs, besides the loss of stock, which cannot be estimated at less than one thousand dollars more.

DO WE MOW TOO MUCH LAND?

So far as our observation in the dairy districts of this country goes, we must say that altogether too much land is devoted to the production of hay. It would be better to mow less, and let that part of the farm which is to be mowed be so managed that full crops may be obtained, while the balance of the ground may be put to pasture or grain crops. Would it not be better to put thirty acres, for instance, in condition to produce seventy tons of hay annually than to mow over and take care of seventy acres—one ton per acre is about our average—to get that product? At a meeting of the Farmers' Club, at Little Falls, N. Y., a year or two ago, Mr. Lewis, of Frankfort, stated that he grew enough hay on twenty-five acres for the winter keep of fifty head of cattle. The twenty-five acres were annually treated with the liquid manure from his stock. It was absorbed in sawdust, and thus easily distributed. When in England, the past season, among the dairy farms, we found this question studied and reduced to a better system than with us. It is a matter of some importance there to know how to keep a liberal amount of stock on a small space. By increasing your stock, you not only add to the receipts, or income, but add also to the fertility of your soil from the increased quantity of manures. They believe, therefore, in extending the area of pasture lands, converting the green food into milk, butter and beef, while the hay lands are reduced to the smallest compass possible. Wherever they can irrigate a meadow it is done, and large yields result. Some adopt the system of alternate cropping and mowing, in order to keep up permanent meadows, and this, of course, in addition to top-dressings. But they have another system not common in this country, and that is, the production of hay on arable lands, in regular rotation of crops, under the three, four or five course shift. For instance, the rotation may be wheat, turnips, barley, grass. The last may be mowed one or two years, according to the shift adopted, when the land is broken up and put to wheat. Now, under this system, the land when put down to grass is seeded heavily, often with from 1½ to 2 bushels of the lighter seeds and 12 to 15 lbs. of the clovers. The result is an immense yield the first year—as much as 2½ tons and more per acre. I went upon meadows of this description where the yield of hay must have been at least 2½ tons, and I estimated it at 3 tons per acre. Then, in winter, they chop the coarse fodder or straw, and feed it with oil cake, and in this way get along with much less meadow land than do our farmers, beside keeping more stock, and making more and better manure.—*X. A. Willard, in Country Gentleman.*

For the New England Farmer.

HYMN OF THE FARMER.

BY THE PEASANT BARD.

When ADAM took the fruit
From gentle EVA's hand,
Then honest Labor first took root
Deep in the virgin land.

For then was earth accurst
That man should toil for bread;
But GOD for good o'er ruled the worst,
And man was blest, instead.

Blest in the teeming soil
His labor did retrieve;
Blest in his vigor-giving toil;
Blest in beguiling EVE.

Welcome to LABOR, then,
That crowns with health our lives!
Hail, ADAM, first of Husbandmen!
EVE, first of Farmer's Wives!

But unto God, alone,
Our homage due be given;
Who deigns, as children, us to own,
And breaks us bread from Heaven.

Gill, Mass., 1866.

EXPERIMENTS WITH MANURES.—E. R. Towley of West Berkshire, Vt., gives in the *Vermont Farmer* the following result of experiments with different kinds of manure on corn, the past season.

The land and cultivation was the same. The ground was an inverted greensward, heavily manured on the surface, and the fertilizers put in the hill. The following was the result when the corn was husked—each plot containing two rows through the fields.

Plot 1, No manure, 2¼ baskets of ears of corn.

Plot 2, A compost consisting of hen manure, ashes, plaster, and earth, 2½ baskets.

Plot 3, Lodi Manufacturing Co.'s Poudrette, 3¼ baskets.

Plot 4, Rotten barn-yard manure 4½ baskets.

Plot 5, Hog manure 5 baskets.

Plot 6, Bradley's X. L. Superphosphate of lime, 5 baskets.

The degree of soundness was in proportion to the yield, the last being the best.

A PURITAN APPLE TREE.

Peregrine White, the first English child born in New England, lived in the eastern extremity of Marshfield, where he also died, in 1704, at the age of 83. His farm was in the possession of a descendant of the fifth generation, of the same name, in 1852. On these premises stands the celebrated tree represented in our engraving. Tradition says it was planted about the year 1648. The owner states that, as far his memory extends, the tree has produced fruit almost every year without interruption. The apples have a superior flavor, being a pleasant sour, and of a beautiful red color. When perfectly ripe, we have rarely eaten a better apple. When the writer visited this tree in 1852, only the right hand branch was standing; this appeared to be a vigorous shoot from the old stock; the residue of the tree, being partially decayed, had been removed.

Every thing that relates to our ancestors, or the times in which they lived, is of interest to us, as their descendants. Would the reader perpetuate his own memory and secure the blessing of coming generations, *let him plant a tree.*

DAIRYMAN'S CONVENTION.

The Second Annual Convention of the American Dairyman's Association was held at Utica, N. Y., Jan. 6th and 7th. Delegates were present from Vermont and other New England States, from several of the Western States and from Canada, but the convention was largely composed of the dairymen of New York.

In his opening address, the president, W. H. Comstock, of Utica, reviewed the results of the work for the year past. Their representative in England, Mr. Willard, had fulfilled his mission admirably, towards whose expenses $1630 had been paid. American cheese was fast gaining a good name in England. It was used upon the tables of many Englishmen.

The speaker suggested several subjects for discussion, which were subsequently assigned to disputants. Officers were elected as follows:

President—Geo. Williams, of Oneida. Vice Presidents—Hon. B. N. Huntingdon, of Oneida; Seth Miller, of Lewis; M. H. Cochrane, of Canada East; Bradford Stiles, of Madison; Dwight J. Woodworth, Cattaraugus; A. D. Hall, of Ohio; Alanson Slawter, of Orange; A. A. Moore, of Vermont; George Williams, of Oneida; Kinney, of Illinois; C. E. Chadwick, of Canada West.

Secretary and Treasurer—G. B. Weeks, of Verona, N. Y.

Government Tax on Cheese.

A committee of three was appointed to proceed to Washington to see what could be done in regard to having the tax taken off from factories on the ground of the perishable nature of milk and its productions. In some remarks upon this subject, Mr. Storms of Montgomery said:

A cheese is in its prime at from one to four months old, according to the state of the weather; after that time it begins to deteriorate, and soon becomes too rank for the popular taste. Whether a reduced temperature and an air-tight composition or varnish would maintain the flavor for a greater length of time, remains to be determined by experiment. We are consequently compelled to sell or submit to inevitable loss by holding on.

Profitableness of Dairying.

In relation to the alleged profitableness of dairy farming, the same gentleman submitted the following figures:

I suppose the average number of acres in dairy farms is about 125, and these should carry, one year with another, 25 cows, a span of horses, and other necessary stock. From these cows there should be made 11,500 pounds of cheese, and butter sufficient for the family, if made at a factory. At 15 cents per pound, this amounts to $1,725. Add $100 for sale of pork, and we have $1,825 as receipts. For expense account, we have interest on land at $80 per acre, and $2,000 in stock and machinery—$840; a man at $30 per month, eight months; a woman at $12 per month; sometimes, and an extra hand in haying and harvest, one month, $52; this amounts to $238, leaving $587, out of which the farmer must board his help, pay taxes, make repairs, and clothe his family. All that remains after deducting reasonable compensation for his own and his wife's labor, need not astonish any body. If, in view of these facts and figures, any one supposes that dairying is so very profitable, their faith must be marvellous indeed.

Purity of Flavor.

After discussing the expediency of the branch system, the convention considered the question, What are the requisites of purity of flavor in cheese, and how can it be secured?

Mr. G. Williams, President elect, considered purity and flavor to be the essentials of cheese. He did not think the quality of cheese depended altogether upon the manufacturer. It depends mainly upon the kind or quality of grass or grain upon which cows are supported. Grass must not only be pure, but everything with it must be pure. No pasture should be used which is mixed with weeds. Eating these impure articles of food invariably produced impure milk, and no good cheese can be made from impure milk. Cows must be in perfect health. It is the interest of dairymen to select only such cows as will produce pure milk, even sacrificing quantity to quality. Milk must be kept where nothing impure can influence it. Milk is a very susceptible article, and readily partakes of the properties of whatever surrounds it. Onions in the same room with milk will communicate their pungent quality to it.

Mr. Farrington, of Canada West, thought there was danger of getting too much of the water out of curd. Where too much water was taken out sour cheese is invariably the result. Private factories he did not believe to be as good as large factories. He had tried it, and had given it up in disgust. The private system could never be carried out and it never would be tried generally again. Concerning purity in cheese, Mr. Farrington said, the impurity and bad quality of cheese during the past year, was owing in a great measure, to the wet season. Mr. F. discussed this part of the question from a scientific point, attributing the impurity of cheese to the surplus of ammonia in the food of the cows. Upon the question of soil Mr. Farrington agreed with those who held that the quality of cheese depends somewhat upon the soil, citing the fact that different localities produced cheese of very widely different quality.

Mr. Willard's Address.

An able and extensive address was delivered on Tuesday evening by Mr. X. A. Willard, which occupied about two hours. His lecture treated mostly of English agriculture and matters pertaining to the dairy husbandry of that country, although he travelled through England, Scotland, Ireland, France and Switzerland. He gave a description of the dairy districts of England—the appearance of the country, the character of soil, grasses and manner in which farms are generally conducted. The dairy farmers of America had much to learn in the management of farms. English farming was vastly superior to ours. It may be compared to our garden culture. Weeds are not permitted to get possession of the soil. The English farmer uses more capital in his busi-

ness than we do. His rents and taxation are often more than the whole receipts of a farm of the same number of acres with us, and yet he pays these and makes a large profit.

Best Stock for the Dairy.

A lengthy debate on the best stock for dairy purposes, resulted in these propositions:

That it is neither safe or profitable to depend on purchasing cows at random for filling up dairies.

That calves can be raised with better results as to cost and quality.

That care should be strictly observed in breeding for the dairy in the selection of the bull as well as the cow, so that the good qualities of the one may not be counteracted by the bad ones of others, and by this means we may be quite sure of superior milkers.

That good cows are cheaper than poor ones, the best way you can fix it.

Butter from Whey.

A statement was made in relation to a patent for making butter from whey, which brought out the following statement by Mr. Riggs of Lewis county, of his success in this line, without the patent process:

After separating the whey from the curd, place it in a tin vat and add a liquid acid. One gallon to the whey of 50 gallons of milk, if the whey is sweet but less quantity if changed. After this, apply heat until it indicates a temperature of from 200 to 212 degrees, Fahrenheit. When the cream rises and is skimmed off and placed in a cool place, let it stand till the next day. Then it is churned at a temperature ranging from 56 to 68 degrees, depending on the weather, and it is worked over and salted in the usual manner of butter making. It will produce on an average one pound of butter from the whey of 150 pounds of milk. The acid is made by taking any quantity of whey at boiling heat after the cream is extracted, adding 1 gallon of strictly sour whey to 10 gallons of this boiling whey, when all the casein remaining in the whey is collected together in one mass and is skimmed off. After the whey is let stand from 24 to 48 hours, it is ready for use as acid. This process is repeated as often as necessity requires.

Best Grasses for Dairy Stock.

The kinds of grasses, &c., for pastures and meadows, and for soiling and feeding cows being under consideration:—

Mr. Lewis said he was aware he should meet a fierce opposition in advocating the good qualities of quack grass. He said it was the most tenacious of life and did better than timothy or clover for pasture. Quack grass would grow either end up on the poorest soil, and even on rocks (provided the rocks be covered deeply enough with soil), or even in the best cultivated and richest soiled gardens. Quack produced better hay than timothy for cattle. Mr. Lewis urged upon the attention of the convention the fact that nature never designed that timothy and clover should grow on every kind of soil. Soils that will not sustain those popular grasses will produce abundance of rich hay from other kinds of grass. On the subject of grain Mr. L. said he had not had experience lately in grain feeding. He had let his grain "go to grass" until his friends had called him a Nebuchadnezzar on grass. After mentioning the different kinds of grain and their quality as food for milch cows he advised the feeding first oat meal, second oat meal, and third oat meal, thus expressing his opinion on the grades of grains for food.

The following recommendation was finally read and apparently endorsed by the convention:—

Grasses for hay or meadows on good soils—June or blue grass, timothy, orchard grass, red-top, smooth stalked meadow grass, tall fescue, and fowlmeadow grass.

For pastures on good soils—Clover, red and white, smooth-stalked meadow grass, timothy, orchard grass, meadow foxtail, sweet-scented vernal grass, and last, but not least, June grass.

For pastures and meadows on moist soils—Rough-stalked meadow grass, red-top orchard grass, tall fescue, June grass, and floating fescue.

For soiling—Winter rye, lucerne, red clover, medium, fall oat-grass and millet.

For pastures and meadows or exhausted or wet clay soils—red-top, couch grass, and quack.

The questions as to the best course to be pursued to secure fair prices for cheese, and as to the expediency of publishing a "circular," or paper, were discussed, on Wednesday, and a committee appointed to solicit subscriptions to the latter.

The foregoing brief abstract of the proceedings of the Convention is condensed from a full report in the *Utica Herald*.

Connecticut River Agricultural Society.—At the annual meeting of this association, at Windsor, Vt., the following officers were elected:—President, Henry Hubbard, Charlestown, N. H.; Vice President, Geo. Olcott, same place; Secretary, Alexander McLane, Fairlee, Vt. Board of Management, in New Hampshire: Hon. Robert Elwell, Langdon; D. F. Tillotson, Orford; Capt. Chester Pike, Cornish; George Rust, Walpole; L. L. Church, West Lebanon; Joseph Powers, Ha-

verhill; F. E. Newcomb, Keene; in Vermont, Nathan Taplin, Corinth; J. D. Wheat, Putney; Eben Bridge, Pomfret: James Y. Prescott, Newbury; Daniel Davis, Jr., Windsor; Richard Bradley, Brattleboro'; George W. Black, Westminster; Darius Russ, Hartford; Jona. Johnson, Bradford; Edward Douglass, Chelsea; H. H. Stone, Bellows Falls; E. R. Jennings, Quechee, and H. W. Kimball, Westminster.

For the New England Farmer.

SUBSOILING.

Why is there so little said upon the above subject at this time? Is it because the subject was overdone a few years since? My impression was, at that time, that every good farmer would have his subsoil plow and use it constantly. But what are the facts? A few farmers bought the plows and used them for a short time; but, as the evidence comes to me, they are mostly put away with other "rubbish."

The arguments then put forth in favor of subsoiling were good, and generally accepted by the farming community. Those arguments are just as good now. That there is need of breaking the soil below the action of the common plow, is a fact beyond any doubt. No man who is posted pretends to deny the utility of it. No good farmer would object to having his soil loosened to any depth. But most of us object to having the subsoil turned up top. We rather it would lie at the bottom, but in condition to be the receptacle of the roots of whatever crop is grown on the soil. We would be most tenaciously particular to have the soil stirred deeply when roots are to be raised. And very necessary is it, when an orchard is to be set.

But the old subsoil plow, for some reason, is mostly discarded. And why? Because it costs so much to do the work, says one. In subsoiling common old ground, it takes a team at the common plow, and another with the subsoil plow. With most farmers this is a serious objection. We can easily calculate on one team, but when two are required, we find ourselves minus. The difficulty then of doing the work, is obviously the reason why subsoiling has been mostly abandoned. The reasons for it yet remain, and it is a work that will pay, provided it can be reasonably accomplished. Let us see if it can, and what the means we have at hand at this time.

Some eight or ten years ago, an old farmer out somewhere in New York, who had a way of doing his own farming and black-smithing with the same hands, conceived the idea of putting an attachment to a common plow, to be used as a subsoiler, which should be simple, cheap and effective. After various experiments the thing was done. His attachment could be afforded for five or six dollars, and put upon any plow in one hour. He used it himself, and his neighbors about him used it. It was so well liked, that the old man was advised to patent it. He did so, and now in his old age enjoys a competence from this little invention. I refer to what is called "Burnham & Pierce's Subsoil Attachment." Perhaps it has been before alluded to in your columns, in a manner corresponding to its merits. But I fear that this, like many other subjects, will need "line upon line and precept upon precept," to make the farmers believe in it enough to try it. When once tried it is never given up.

It is a trowel shaped implement attached to a bar two feet long. A clamp on the inside of the plow beam holds the top of the bar in place, and a rod running from the plow back, holds the block in its proper position. It runs in the furrow after the plow, and can be raised or lowered at pleasure. When it runs three or four inches deeper than the plow, a good horse extra is required to move it. In order to furnish your readers a little evidence of what practical farmers think of it,—in order to strengthen their faith,—I subjoin a report of a special committee raised by the old Hillsborough County, N. H., Agricultural and Mechanical Society, during its fair last fall.

To the President and Officers of the Hillsborough Agricultural Society.

GENTLEMEN:—The undersigned, a special committee, raised at your fair, October 4th, 1866, to witness the trial of the recently invented Subsoil Attachment to plows, beg leave to report that we witnessed the trial of one attached to a swivel plow by Z. Breed, of Weare, and one attached to a common plow by T. H. Harvell, of Amherst, and hereby express the opinion, that these implements did the work better, and in a more expeditious manner than any we have before seen, and we consider it a valuable appendage.

It can be applied to any sod or breaking-up plow, either swivel or land-side, at moderate expense by any one wishing to adopt the principle of subsoiling. Its operation is to loosen the soil but *not to turn it up.* Henry D. Pierce, T. G. Holbrook, R. Holbrook, Thos. Cloutman, David Butterfield, N. F. Richardson, J. G. Morse, George Buss, J. Cleaves, O. B. Clark, E. Ware, T. G. Banks, W. D. Locke.

Subsequent to this trial "W. D. L.," a correspondent of the *Mirror and Farmer*, wrote as follows: "At the late fair at Milford, I had the pleasure of holding, for a few rods, a reversible plow with subsoil attachment. Truly, it was an era in my farming experience, at the age of "three score years." I am sure it was the most perfect plow I ever laid hands upon, turning the rod naturally and completely breaking the subsoil, and pulverizing it in a masterly manner, to any desirable depth below the usual furrow bed. I have had great confidence in subsoiling for twenty years, but had never before seen an implement so well adapted to the work—simple, cheap and durable. I felt proud of the inventive genius of my countrymen of the agricultural class, for it must have been the result of the study of some practical plowman. True, the subsoiler takes more team, but then it does its work so admirably,

so deeply, that the subsequent plowings will be much easier, to say nothing of the increase of crops. I most heartily congratulate the tillers of the soil in view of its general introduction. And then, the hoeing is so much easier, one can hardly refrain from "three cheers for the invention."

Excuse me for this lengthy letter. Perhaps I have taken more space than I should, but having used the implement, and experienced its benefits, I wished to present the evidence. Yours for "the best," always,

Weare, N. H., Jan., 1867. Z. BREED.

For the New England Farmer.

APPLE TREES---SEEDING LAND--- BONES, &c.

MESSRS. EDITORS:—Please accept the thanks of "*An Inquiring Owner of a Muck-bed*" for your replies to inquiries in the FARMER of Dec. 8th. I am not in ecstacies over being made suddenly rich, but shall endeavor to profit by your calculations, and find out by actual trial what benefit there is in the muck, and try to make "two blades of grass grow where only one grows now."

I was also so well pleased with your article on *Pruning Apple Trees*, in reply to a correspondent, and was so convinced by your logic that the first suitable day I went into my orchard and trimmed the trees that were left in the summer.

1. Now I wish to be informed if apple trees set out where old apple trees stood will do as well. My orchard was set out by my father, perhaps 40 years ago, and what trimming it has had was in the spring, when he was ready to plow it. Many of the trees are decayed where the larger limbs were cut off, and do not produce any perfect fruit. I wish to take away those trees this winter, cultivate the ground well during the summer, manuring it well, and next spring set other trees in their places. Will they thrive?

2. I have two acres of stalk ground; on one half of it I wish to sow oats, and on the other plant potatoes, and seed down in the fall with rye and grass. I propose to sow the oats without manure, as it was heavily manured for corn last spring, but to manure for potatoes at the rate of 10 or 12 cords per acre, then sow on ground bone at the rate of half a ton per acre, as bone does better on my land for grass and grain than any other fertilizer that I have ever used.

When is the best time to sow the bone? when the ground is prepared for potatoes, when they are being cultivated, or when the ground is laid down? When is the best time to sow it on the oat ground? and will it pay to plow the oat ground more than once after the oats are taken off?

I would like the experience of others with these crops, and that is why I send these inquiries now, for I feel that the columns of the *enlarged* FARMER will be of too much value to be taken up with my inquiries or experience.

This is a progressive age, and there is a growing interest in agriculture. Farmers, young farmers in particular, are reading more, and are more desirous to acquire information on the subject and to learn the experience of those grown wise in the business, than ever before; and I think I am justified in the assertion that there are more agricultural papers and books read now than in any previous year.

I would therefore like to put one question to our successful and experienced farmers. How can you give your influence to advance the farming interest of New England more than by spending a portion of the cold and stormy days of this winter in giving your experience through the columns of the FARMER on the management of farm and stock? EXPERIOR.

My Farm, Mass., Dec. 22, 1866.

REMARKS.—1. Young apple trees set out where old ones have been growing will undoubtedly do well under proper treatment, although we should prefer another location. They will need a deep, rich soil, and a half peck of unleached ashes strewed around them once in each year. If large trees with overshadowing branches are near, they will affect the young trees; but if 30 or 40 feet away, they will not sensibly injure them, under the treatment suggested for the new ones. It will be of advantage to dig about the young trees whenever the land lies in grass—the broader the diameter the better.

2. Bone acts slowly, and we should therefore sow it when the ground is prepared for the crop—either of potatoes or oats.

The columns of the "enlarged FARMER" will always welcome your inquiries or experience. Would that many others would furnish theirs.

For the New England Farmer.

THE TARIFF UPON WOOL.

I have watched with deep interest, as have a great many others, all that has been said upon the question of the tariff upon wool; and I see by your issue of Jan. 5, that *you* think that Congress is not going to increase the duties on wool so as to help the wool growing interest. I suppose it is owing in a great measure to the outside pressure or lobbying of the manufacturers. Now it seems to me that the manufacturers are not only injuring the farming interest of the country, but are also cutting their own throats, as the prosperity of the wool-producer and manufacturer are so closely connected that what works for the interest of one *must* work for the interest of the other.

I see it stated that there has been imported

$70,000,000 worth of wool the past year. It seems as though they must see that sending so much money out of the country for wool, while so many of our farmers hold *one* clip, and a great many *two*,—and flooding the country with cloth more than there is any sale for, will not work for their advantage. If that money had been paid out at home much of it would have found its way back to the manufacturers.

In my small circle of acquaintances I know of several old overcoats and cloaks that will have to do duty another year, because "wool don't sell," and I dare say it is so throughout the country. You may say that this only applies to a few,—the wool-growers. But I believe it has a wider application than one would at first think. When the farmers are short for money they do not buy new tools; do not repair their buildings; do not hire help to ditch, and make other improvements on the farm; do not travel for pleasure; *do not buy unnecessary clothing*. This reminds me of a "little story" I once heard my father tell of a very poor neighbor, who lost his cow. It was at a time when cows were cheap, and some of his friends were congratulating him that he could buy another for ten dollars. "Yes," says he, "if you could buy one for two cents, and you hain't got the two cents, what good will it do?"

Our country is broad enough to raise all the wool, and that of *every kind*, that is needed, if it can be properly protected. Although the cloth may cost a trifle more, the money will be here to pay for it with. Wool Grower.

Norwich, Vt., Jan. 10, 1867.

For the New England Farmer.

SQUASHES AND WATERMELONS.

A BIT FOR THE BOYS.

It is no trifle of a matter to know when and how to plant and sow. And then it is something to understand what seeds to put into our land. Seeds may be too old to grow; and they may be too fresh, we know. We shall none of us be too wise, if we study long; and without care we may be quite foolish and wrong.

Last summer I planted about a quarter of an acre of squashes. They were of the Autumnal Marrow. Part of the seeds were several years old, and part were fresh seeds of 1865. They were in the same field, but not mixed together. The ground was all dressed, as nearly as possible, alike. Well, what of it?

The fresh seeds came up more readily, in little if any more than half the time taken by the old seeds. They were all planted on the first day of June, which is as early as I ever want to plant such squashes, except perhaps some to be very early.

The plants from the old seeds had squashes set on them a week or ten days earlier than those from the fresh seeds; and they matured more and better squashes than the others, and no mistake.

It is not always best, boys, to plant fresh seeds. I hold squashes, at least, to be an exception. I like to have seeds selected from the very best, and carefully dried, and then carefully marked in the package, as to the kind, and the year they were raised. The children of young seeds are like unsteady boys, too fond of running about—grow too much vine.

And another bit for the boys. Don't you like good, first-rate watermelons? If you do, the cows do likewise. I like to have enough of them to select the best; and then the cows will pay for what you give them, liberally.

A compost of night-soil, charcoal dust, plaster and muck, will grow as nice watermelons as a king or a cow ought to covet. They are not only very delicious for us poor humans, but they are among the very best bits to bring down a flood of nice, sweet milk. Will the boys about the farm put this in a corner of their thinking-caps for next summer's use? I think they will not regret it, and I know the cows will not. A. G. C.

Lee, N. H., Jan., 1867.

Remarks.—In the above writer, the older readers of the Farmer will recognize the well known features of a most genial and well remembered acquaintance, whom we shall all be glad to see more frequently during the present "Happy New Year."

EXTRACTS AND REPLIES.

WARM BREAKFAST FOR THE HENS IN WINTER.

It is a practice with many who keep poultry to feed them these sharp winter mornings with grain so cold and frosty, that our hands ache the little time that is required in throwing it out. Let those who dislike a cold breakfast themselves take a dish of corn and set it under the stove a few moments, or pour hot water on it. It will soon heat either way. After feeding of your poultry, the lively cooing and singing will repay you for your trouble.

Now, Mr. Farmer, if you feel disposed to elevate your eyebrows, because a woman has stepped in your path, my excuse is that had you done your duty, I should not have deemed it mine to speak for the biddies. Millie.

Waterbury, Vt., Dec. 26, 1866.

Remarks.—"Elevate the eyebrows?" Why, instead of that, one of our blandest smiles was excited by your humane suggestions. But, dear "Millie," we know of a good woman who not only warms a dish of corn for her hens of a cold morning, but also, very slightly, a dish of clean water, which she thinks adds much to the volume and richness of that song of gratitude which so well repays you for your care and labor.

FEEDING BEES.

Information is wanted as to the best time, place and manner for feeding bees. There are almost as many ways of feeding bees as neat stock. I know of no method which possesses any merit but top feeding.

Dissolve the best grade of brown sugar in water, bring to a scald, remove the scum. It should then

be of the thickness of molasses. If too much watered it will cause dysentery. Fill empty comb with this material, and place it in the chamber of a chamber hive; or if in an old-fashioned hive, bore through the centre of the top with an inch and a quarter bit or auger; remove the chips, trim off the splinters with a knife. If, while doing this, the bees manifest a disposition to come up, pour a little of the bee feed in among them, which will keep them down for the time being; then place the comb filled with the bee feed upon the top of the hive and cover with an open inverted box or peck measure. Wrap up the hives with rugs or quilts. The best time to feed them is as soon as possible. The best place is up chamber, directly over the kitchen or living room of the house.

Feed them in this manner right straight along up into the spring, till the bees are so numerous and the weather so warm as to render feeding impracticable. When unusually fine, warm days occur during the winter, set them out on their summer stands and allow them to fly. This must be rigidly adhered to, for to confine bees from fall till spring without an opportunity to fly, is almost sure death to them. By this method I have fed first and second swarms, which did as well and swarmed as early as the best, although extremely deficient of both honey and comb. They need feeding as often as twice a week, or at least seeing to. I am at present feeding four swarms and have never failed. The expense is less than the value of the swarms after they are wintered. It is well known that bees almost always have honey enough to last them till the first or the middle of the winter. But very few swarms accumulated sufficient winter stores the past season. A. Leavitt.

Chichester, N. H., Jan. 15, 1867.

CLOTH PEDDLERS.

A correspondent in Ashburnham, Mass., thinks that the tricks of irresponsible cloth peddlers in that section ought to be shown up. In the first place, should not the folly of those who buy of such men articles which they do not know the value of, be shown up, till people learn to patronize dealers of known responsibility and character? Our correspondent says:

The one that was here last, said that a great failure had recently occurred in New York, which had sent out a great many teams with directions to sell for what the goods would fetch, even if less than one quarter of the cost of the articles was realized, so as to save something for the company. He said there would be retail teams along in the course of a week, which would sell six to nine quarter cotton cloth for 25c per yard, American calico for 6c, French at 10c, and woolen cloths at prices to correspond. He had samples of the cotton cloths, and a few pieces of woolens with him, which he offered at wholesale,—nothing less than $25. He had a great coat pattern that he said was worth $50 in New York when first put into the store, but he would sell the two-and-a-half yards for $25. I finally bought it for $10. It proves to be cotton warp with fair shoddy filling—a good cloth of the kind, but not what I bargained for. So much for my shave. Would it not be well to put such fellows on paper, that honest people may be put on their guard, if nothing more can be done.

A. W.

FILM ON AN OX'S EYE.

I noticed in the Farmer of Jan. 5, 1866, an inquiry by "E. E. A.," of Sunderland, Mass., if there is "any simple way to take a film from an ox's eye?" I would say that I have never known the following to fail: take checkerberry leaves, simmer them in lard until they are brittle, and when cooled so that it is barely warm to the touch, apply it to the ox's eye ball, either with a feather or by taking the ox by the horn and turning his head up, so as to turn it into the eye. I prefer the latter.

No. Sutton, N. H., Jan. 9, 1867. J. Pressey.

Remarks.—"H. P.," of Wilton, N. H., writes that he has found turkey's oil, applied a few times to the eye with a feather, to effect a cure in both oxen and horses.

USE OF TOBACCO.

Our long winter evenings have come, and now shall we not have a discussion through your paper on the use of tobacco. Inquirer.

Brandon, Vt., Dec. 21, 1866.

Remarks.—Were this subject appropriate to our columns, who that has the use of his eyes and nose would seriously argue in favor of a practice which injures health and unfits one for association with the clean and tidy.

A FINE PIG.

W. H. H. Peabody, of Wilmot, killed a pig, 8 months 20 days old, that weighed when dressed, after hanging up one day, 505 lbs; width across the hips and shoulders 22 inches; length 6 feet. Fed on milk and potatoes to the first of September; since then has had 4 bushels barley, and 13 of corn.

Wilmot, N. H., Dec. 24, 1866. A. W. M.

FOUR GOOD PIGS.

I slaughtered a few days since four Chester Co., pigs, eight months old, which weighed as follows: 276 lbs.; 279 lbs.; 297 lbs.; and 332 lbs.; whole weight of the four pigs, 1184 lbs. D. Dwight.

Dudley, Mass., Jan. 11, 1867.

PROFITABLE HENS.

Mr. John Buckman, of Stoneham, Mass., a subscriber to the Farmer, commenced an account, March 1st, with 22 hens. Up to November, the sales from his henery amounted to $126. He had also, 16 nice pullets, worth $1.50 each, or $24. Making the total income $150 up to that time. Grain fed $35. Further particulars promised at the close of the year, March 1st.

BOOK ON DOMESTIC ANIMALS.

Will you do me the favor to name some practical work or works on the horse and other domestic animals,—not Youatt's or Mason's,—that would suit a small farmer. I do not notice any advertisements of such as I want in your paper.

S. H. Melcher.

La Grange, Tenn., Dec., 1866.

Remarks.—There is a work on Domestic Animals, their breeds, management, diseases, &c., by R. L. Allen, published in New York; The American Cattle Doctor, by G. H. Dadd; and Cole's, quite a small but good book. As good a work as you can find, probably, is the Farmer's Encyclopedia,—that treats of all stock and all crops on the farm, soils, &c., &c.

MARKET REPORTS.

Your Market Reports, of which you boast so much, appear to me to fall behind the *New York Tribune* in the price of veal calves, and lump butter, both of which we farmers deal in to some extent, and we want to know the highest as well as the lowest prices of both these articles.

AN OLD SUBSCRIBER.

Shelburne, Mass., Jan. 19, 1867.

REMARKS.—Our cattle reporter informs us that he is no better satisfied with his report of veals than "An Old Subscriber" appears to be. In New York calves are sold by weight, as are cattle, sheep, hogs and poultry. But among the peculiar whims which have caused Boston to be nicknamed the "City of Notions," are the habits of allowing five quarters to an ox, of paying for only about two-thirds of his actual live weight, and of buying calves on commission—that is, of giving the drover one dollar, more or less, per head for buying and delivering them. "The highest as well as the lowest prices" of veals, therefore, depends very largely on the skill or luck of the drover in trading with the individual farmers of whom he buys; and consequently the price is decided in the country rather than at Brighton. If not sold in this way they are bargained for by the head—the eyes of drover and butcher being the only standard of weight and price—the range of $5 to $25 each, being often exceeded at each extreme, according to size and quality. How can such an unintelligible style of doing business be intelligibly reported?

Our retail prices of lump butter are corrected weekly by the gentlemen whose names head that table. Our wholesale prices are also corrected weekly from the most reliable financial papers, as well as by dealers in leading articles of produce.

The fancy prices which are paid by a few families for the butter from certain dairies of established reputation for the production of a superior article, are no criterion of the state of the market, and if quoted would tend to raise expectations which would be sure to be disappointed.

CONVENIENCES FOR WATER—NO. II.

In my last I promised to give examples of failures in the use of the hydraulic ram, and some of the causes of failures.

CASE 1. In a town in Orleans County I knew a farm that was watered by a ram situated at a distance of 150 rods; the water being elevated two hundred and forty feet. The ram was constantly needing repairs, and I was called on to apply a remedy. It had never operated more than two weeks without an entire overhauling, and often a failure of pipes and ram occurred at the same time. My patient was examined. After ascertaining the price the farm would bring, and a careful consideration of the whole case, the best and only practical thing I could recommend was, "Sell your farm, Sir, and buy where water will run down hill, and let this be divided up for pastures." The extreme elevation was too much for a sure operation of the works without an outlay for fixtures that was unwarrantable for the farm. Any practical inquirer would have advised not to put in the work, had there been no pecuniary interest accruing to himself, which should never be in the way.

CASE 2. The opposite extreme. A ram in Windsor County was a failure. The distance was six rods and the elevation about eight feet. The operation was very uncertain. When in operation it threw a large and intermittent stream—and stopped without any cause visible to the owner. On examination I found there was too small an elevation, and the airchamber had no effect. The remedy applied was simply a tight plug of wood at the place of discharge, and instead of an open pipe only an outlet the size of a cambric needle was left. This caused the flow to be checked, and the water retained in the air-chamber, which condensed the air and caused it to expand and contract again at each stroke of the piston. The effect was all that could be desired—a small, permanent stream forcibly ejected from the place of discharge instead of the lazy, intermittent, uncertain stream before.

If the reader will lay these papers aside for future reference it may be of interest, as I propose to mention other cases of failure, from time to time, which may draw out a scientific explanation of the principle involved in the operation of the ram, from some more competent person than myself, and which is not given in the text books of philosophy.

Orleans County, Vt., 1867. P. J.

PINE TREES

In the winter season we should all have some forecast for the coming busy months. In my travels I have been struck with the appearance of a piece of road on one side of which, for about one-fourth of a mile, pine trees have been set for the purpose of protecting the road from the high wind. There was much beauty in this arrangement of the highway, and a delighful shade in summer. But its obvious utility was what presented itself most forcibly. How many miles of bleak and drifted roads might be made comfortable and even pleasant in winter by means of this cheap method. How many thousands of dollars might be saved to towns in the item of breaking out highways in winter; besides all the vexations delays and losses incident to travellers, on account of drifts and blocked up roads.

There are in many of our most enterprising towns, associations formed for the purpose of setting out trees, to improve and adorn the highways and public grounds. Why cannot these tree societies extend their operations so as to embrace improvements of this kind; or, if this is too extensive a field of labor, why cannot they, or other public-spirited individuals, bring the matter to the attention of their respective towns? It seems to me that here is a matter in which almost every town in New England might be greatly benefited by a little expense judiciously applied.

There are also many places where pine trees might be set to advantage around unsightly rocks in fields near the dwelling. A hardy variety of grape might also be planted in such places, and the pine trees, as soon as large enough, would for several years form one of the very best supports. I have had grapes ripen in such pines, uninjured by frosts, a fortnight after the fruit had been destroyed in other localities. E.

Massachusetts, Jan., 1867.

WINTERING BEES.

I am truly interested in your valuable paper, treating on so many interesting subjects. But the articles on bee management have particularly interested me, especially that written by C. S. Wild, in FARMER of Dec. 29, on keeping bees from perishing during the winter, which I much approve. I think the location has something to do with the success of bee-keeping. The bee house should stand in the warmest place that can be found, so that the bees can, as early as possible, start the

young brood, as this work will be delayed if the place is cold. The building should not be connected with any other building, or fence, to avoid the spiders as much as possible, which devour a great many bees in the course of the season. The house should stand so the sun can shine upon the hives from early morn till evening shade; the back as well as the front being left open, so that the bees will have the same chance to pass in and out both back and front. This gives a draft of fresh air and tends to keep them dry and healthy. This plan is practiced out West. I also noticed that they raised the hive from the bottom board from one-half to one-third of an inch, by a small piece of wood at each corner. This, however, is not done till the white clover heads out, which is considered the best part of the honey season, when it is found that ordinary entrances are not sufficient for the industrious multitudes. At this time there is no danger of swarms robbing or being robbed, but the hives should be let down as soon as the clover season is over.

The hive, if made of boards, should be from one and a quarter to one and a third of an inch thick. If inch boards are used, the inside should be lined with stuff one-fourth or one-third of an inch thick, with a space between of one-eighth of an inch. Then let them be well painted, and oftener than you paint your dwelling-house. A hive of this description, with a decent swarm and plenty of honey, will hardly freeze anywhere. But notwithstanding all this, I recommend friend Wild's plan of packing round the straw. If you have a small swarm, give them a little extra care by puting over them a few old blankets, or something of the kind.

Putting bees in cellars I think is bad policy. The bees get damp, and the comb comes out black in the spring. The bees that make out to live come out generally feeble, so far as my experience goes. The whole secret, then, of wintering bees and having them come out strong in the spring, is a warm place, a warm hive, plenty of honey, and plenty of pure air. J. C. Hill.

East Saugus, Mass., Jan. 7, 1867.

THINK, TALK, PUBLISH.

I often think that the editor of the Farmer must be a patient man to answer so deliberately, fully and respectfully all the minute,—not to say simple—inquiries that are asked. But, after all, I am not sure you are not doing that which the world stands the most in need of. The whole creation is made up of particles so minute, that we are told the most powerful microscope fails to present to the eye the form of the minutest atom. The world of thought, who shall limit it? And if we think, why not talk? If talk, why not write? But if every one is to write out his own thoughts and keep them to himself, he might as well not write at all. But we are not going to stop there—think and talk we will. Yes, but how are we going to reach the ears of those who are hundreds of miles away from us, when our own voices, at the loudest, cannot reach beyond our own neighborhood? We are going to use the printer; yes, that's it; he will do the job; he will give our thoughts to the winds, which like the seed in its downy balloon, shall be floated to a genial soil, where it shall take root and reproduce its kind. C. Stearns.

Ashburnham, Mass., Jan. 5, 1867.

FEEDING BEES.

In reply to "P. E. S." in Farmer of Jan. 12, I would say, I know of no way to feed bees if kept in a place as cold as an ordinary bee house. If they need feeding before it is warm enough to fly, they will need it very often, every day or two. They will require about as much care as a pig. The place must be warm enough for them to leave the cluster and go to the feed without becoming chilled. Feeding so often and keeping them so warm will keep them constantly excited, much to their injury. If it is warm enough where the bees are kept for them to go into the chamber of the hive, they can be fed there more conveniently than in any other part of the hive. Candy has been recommended as winter feed for bees. I have tried it with unsatisfactory success. Feeding bees in season, say in July, August or September, will pay; if neglected then, a swarm destitute of honey in the winter is of doubtful value. Refined sugar made into a syrup as thick as it can be kept in that condition is as good feed as can be desired for bees. It must be put into something provided with a floor to protect the bees from being wet with it. The floor may be perforated so as to allow the bees to reach the feed. A wooden feeder in winter is better than a metallic one, because it is not so cold. They will require food not only for themselves but for the brood, which, in early spring, will be considerable. A weak swarm fed liberally in early will repay it with interest before the season spring is through. F. F. Fiske.

Mast Yard, N. H., 1867.

EXPERIMENTS WITH SPECIAL MANURES.

I wish to say a few words in relation to my experience in using flour of bone. When new articles are offered for sale, even though highly extolled, I am generally very cautious in beginning with them, first testing them before using them much. The editor of the Farmer, endorsed the flour of bone—said it was a valuable fertilizer, adapted to all soils. I bought two barrels at a cost of over $22. I plowed a piece of lightish, sandy land in my pasture, and put on a light dressing of manure from the barn-yard, and turned it under, doing by the whole field as much alike as possible. I bought fish guano, composted with muck, and spread on and harrowed in, at the rate of between 400 and 500 pounds to the acre. About an acre I reserved and sowed on the flour of bone and harrowed it in, I think about 200 pounds to the acre. The corn all came up well. June was a cold month. It did not push ahead. Where the fish was the corn was thrifty, kept a good color, and yielded a better crop than I expected. Where the bone was used, the corn looked feeble, sickly, and yellow, and produced, by the acre, rather more than half as much as the other, more than one-third of which was unripe. I had another piece of an acre and a half which I manured much better and sowed on flour of bone to give the corn a start, but with no better result than the other. I sowed a strip of grass land with it, in two fields, but never discerned a particle of difference where it was applied. I hope the readers of the Farmer will be benefited by the experience of farmers using it, in different localities and in different States. Elijah Gunn.

Montague, Mass., Dec. 31, 1866.

Remarks.—We are obliged to our correspondent for communicating his experiments. They show the importance of testing all new things in a small way. That his experiments with the bone were unsatisfactory, is not strange. It could hardly be expected that 200 pounds of bone to the acre, in an unfermented condition, would make much change on "lightish, sandy land," with only a "light dressing of manure." If all the manure had been put upon *half* an acre, and the bone flour had been fermented with muck, and applied to the hill, we have no doubt but a paying crop would have been the result. Bone acts very slowly. Even if reduced

to flour, its effects will be slow, unless it is brought into, or very near the putrefactive state before it is used.

The same results, however, sometimes occur in the use of barn manure. We can show our correspondent a smooth pasture, one portion of which was covered with coarse, but rich barn manure, in the autumn of 1865, and another portion of the same piece highly dressed with the liquids from the cattle stalls. In the spring of 1866, the coarse portions of the manure were raked up and carried away, and a luxuriant growth of grass was expected on both pieces; but, lo! it did not come. Spring rains did not give it any unusual vitality, and summer suns and showers came and passed away with the same result! Why? Will our correspondent tell us? We do not know, and can only conjecture. Such cases are not uncommon. Is it strange, then, that similar failures should sometimes take place in the use of a substance so dry and hard as bone?

We hope our correspondent will not be entirely discouraged by one or two trials, but mingle bone with muck or soil, and let it remain until a slight heat ensues, and fermentation takes place, and then mingle it liberally with the soil in the hill, and carefully note the result.

Flour of bone will heat rapidly, and care must be taken not to let it go too far. An experiment showed that a single gill of bone flour, mixed with muck and put in a warm place, gave a heat of 112 degrees, in the course of two or three days.

THE CONGENITAL SCROTAL HERNIA COLT

For which I asked advice in the FARMER some months since, has entirely recovered, *without* the castration recommended, or any other application! So, also, has my neighbor's colt, in the same condition!

Did any of your readers ever know of such a case, that did *not* recover, if allowed a fair chance?

Vermont, Jan., 1867. LECTUM.

CURE FOR BOG SPAVIN.

Please advise David George to apply an India rubber bandage for his bog spavin, and keep it on until the swelling is reduced. A. L. T.

Fitchburg, Dec. 17, 1866.

A PAIR OF NICE HOGS, ON UNCOOKED FOOD.

I purchased two pigs, four weeks old, October 16, 1864. They were a small breed, partly Chester County. They were kept mostly on skimmed milk, with a very little meal, till May, 1865. From May to July they were kept almost wholly on milk with a few weeds. When dry weather commenced, not having sufficient milk for them, I began to give them meal, increasing the quantity of meal as the milk lessened. In September, I began to give them potatoes and pumpkins, but did not discontinue the meal. For several months their usual allowance was three quarts of meal three times a day, with what milk we had, and the same quantity of potatoes, or an equivalent in pumpkins. Several weeks before they were killed I began gradually to lessen the quantity of potatoes, but gave them some at every meal. I never cooked anything for them, and never gave anything warm. They were never sick, and never took any medicine. Dec. 15, 1865, one weighed, dressed, 396, the other 342 pounds.

Quite a number of pigs of this same litter were sold to different individuals and killed about the same time, but not one of them, so far as I can learn, weighed over 300 pounds. There are certainly two weighty reasons in favor of giving hogs uncooked food. It saves labor, and avoids all danger of injuring them with hot food. E. B.

Derry, N. H., 1866.

WOOL-GROWERS' ASSOCIATIONS.

Pennsylvania.

Our thanks are due to some kind friend for slips of the Pittsburgh, Pa., papers, containing the proceedings of the Wool-Growers of that State, at the annual meeting, Jan. 16th. The following officers were elected:—

President—Dr. F. Julius LeMoyne, of Washington county.

Vice Presidents—James Slocum, Fayette county; J. C. White, Lawrence; H. H. Crell, Greene; J. J. Bard, Butler; George Rea, Westmoreland; J. Hoagland, Mercer; John Cain, Beaver; Gen. Harry White, Indiana; Joseph A. Thompson, Armstrong; Asa Manchester, Washington; Hon. William F. Johnston, Philadelphia.

Secretary and Treasurer—John McDonald Glenn, Alleghany county.

Executive Committee—John Ewing, David Houston, Samuel McFarland, Washington county.

Representative to the National Society—James Slocum, Fayette county.

In some discussion upon the tariff bill, Mr. Lee, of Alleghany expressed fears that if the bill should pass in its present form, eighty-five per cent. of the foreign wools imported would come in at three cents duty; alluding probably to the "third class," which provides for the importation of "carpet wools," at that rate. The same fear has been expressed by others. After a full discussion, however, the following resolutions were adopted as the sense of the meeting:—

That it is of the first importance that the wool-growers' interest of our country should have ample protection; and that the present tariff is wholly inadequate for that purpose; that the association, therefore, respectfully but earnestly urges upon Congress the passage of the tariff bill, on Wool and Woolens, as passed by the lower House of Congress at its last session.

Ohio.

At the regular winter meeting of the Wool-Growers' Association, at Columbus, Jan. 8, a more elaborate series of resolutions to the same effect were carried nearly unanimously, although a memorial was read by John H. Klippart from the Franklin county society, which set forth in substance, as we learn by the *Ohio Farmer*, that by the arrangement between the Wool-Growers and Woolen Manu-

facturers at Syracuse, and through the action of the Joint Committee of those bodies afterward, the wool-growers had surrendered their rights to equal protection, and had been adroitly over-reached by the manufacturers in the adjustment of tariff duties on wool and woolens.

The following elections were made :—

Hon. Columbus Delano, of Knox county, was elected President; Dr. H. S. Conklin, of Shelby county, Vice President; S. D. Harris, of Cleveland, Secretary and Treasurer; R. M. Montgomery, Representative in the Executive Committee of National Wool-Growers' Association; J. C. Stevens, of Hardin county, J. B. Jamison, of Harrison, and N. S. Townsend, of Lorain, Directors.

A vote of thanks for the untiring labors of their late president, Hon. R. M. Montgomery, then at his post in Washington, was adopted.

Illinois.

The wool-growers of Illinois met at Springfield, Jan. 8th. The attendance was large,—members from nearly all parts of the State being present. A series of twelve resolutions were adopted, which show that the farmers of that great State are in earnest in their demands that the house tariff bill on wools and woolens, or the one equally protective, now pending in the Senate of the United States, shall become a law of the land. They also resolve, that we are opposed to our country remaining any longer the rag-bag of the world, and that Congress ought to put a stop to the importation of shoddy or woolen rags, either by direct law or such rates of duty as will effectually prohibit them.

Better protection, by State Legislation, from dogs is also insisted upon.

STATE AGRICULTURAL SOCIETIES.

Maine.—At the annual meeting of the State Agricultural Society, at Augusta, Jan. 16, the following officers were elected :—

President—Seward Dill, of Phillips.
Secretary—Samuel L. Boardman of Augusta.
Treasurer—Wm. S. Badger, of Augusta.
Trustees—Samuel Wasson, of Ellsworth; Warren Percival, of Vassalboro'.

At the annual meeting of the Maine Board of Agriculture, at the same time and place, the election of officers resulted as follows :—

President—Samuel Wasson, of Ellsworth.
Vice President—Asa Smith, of Mattawamkeag.
Secretary—S. L. Goodale, of Saco.
Messenger—Asa R. Boardman, of South Norridgewock.

This Board during its annual session of several days discussed a wide range of agricultural subjects, as will be seen by the following list of topics which were presented by the Business Committee :—

1—Under what conditions will agriculture in Maine be most successful?
2—To what extent can the preparation of the soil for crops be profitably carried in autumn?
3—In what manner and to what extent should farms be fenced?
4—The construction of barns.
5—To what extent should mixed husbandry be practiced?
6—What are the best methods of seeding down to grass?
7—Do health and economy require more attention, on the part of our farmers, to the production and use of garden vegetables and fruits?
8—The imperfect obligations—as their discharge affects the physical as well as moral health of the farmer and his family.
9—Are the direct and indirect advantages of sheep husbandry with the present tariff on foreign wool such as to warrant its increase in Maine?
10—Which is the most profitable, the raising of cattle or sheep?
11—By what practicable method can an effective and useful connexion between the Industrial College and the common schools be affected?
12—Can artificial manures be profitably used, and if so, what kind, and to what extent?
13—The comparative advantages of the culture of Indian corn and the smaller grains.

The *Maine Farmer* of Jan. 24, gives a report of the first five days' proceedings, which we have laid aside for future use.

Connecticut.—At the annual meeting of the Connecticut Agricultural Society, at New Haven, Jan. 9, the following officers were elected :—

President—Ephraim H. Hyde, of Tolland.
Vice Presidents—Robbins Battell, of Norfolk, H. L. Stewart, of Middle Haddam.
Corresponding Secretary—T. S. Gold, of Cornwall.
Recording Secretary—Burdett Loomis, of Windsor Locks.
Treasurer—F. A. Brown, of Hartford.
County Directors—New Haven County, Dr. Charles B. Whittlesey; Hartford County, C. M. Pond; New London County, James A. Bill; Fairfield County, Charles Hough; Windham County, Benj. F. Sumner; Litchfield County, George C. Hitchcock; Middlesex County, P. M. Augur; Tolland County, S. F. West.
Chemist—Prof. S. W. Johnson, of Yale College.

The State Board of Agriculture created by the Legislature in May last, met at the same time and place. The President (*ex-officio* a member) is the Governor of the State; the Vice President is Hon. E. H. Hyde, of Stafford; and the Secretary is T. S. Gold, of Cornwall. The members appointed by the Governor, and confirmed by the Senate, were Hon. Mr. Hyde, Howard Collins, Esq., of Canton, Prof. S. W. Johnson, of New Haven, and Mr. Gildersleeve, of Portland. Each county society, or society receiving State aid, is entitled to name a member.

Ohio.—The *Ohio Farmer* furnishes full re-

ports of the annual meeting of the State Board of Agriculture, at Columbus, Jan. 9th. We have space merely to say that the business committee reported several subjects for discussion, on the first of which, the State Agricultural college, Judge Jones of Delaware county, one of the Commission appointed by the Governor to consider and report upon the subject of location, said that, in his opinion, if the committee had been authorized to locate the college, eligible sites and the necessary funds would have been proffered. The land donated by Congress had all been sold at an average of 53 cents per acre, and had thus availed only about half the amount that was expected. At the close of Mr. J.'s remarks, the convention voted to adhere to the resolution it adopted in its session of 1865, expressing itself in favor of one college and opposed to the division of the funds. Resolutions were presented denouncing monopolies and combinations, and arguing against the enactment of an eight-hour labor law.

The Board organized by the election of Daniel McMillian as President; James Buckingham, Treasurer; John H. Klippart, Corresponding Secretary, and Henry S. Babbett, Recording Secretary.

Time of Sowing Winter and Spring Wheat.—At a late discussion by the Fitchburg, Mass., Farmer's Club, Mr. Ephraim Graham is reported by the *Sentinel* to have said that winter wheat, if sown the last of August or first of September, is usually a sure crop, but if sown in October, *doubtful*. In case spring wheat cannot be sown as soon as April 20, it is better to seed with some other grain. Mr. Solon Carter, of Leominster, said that wheat paid him less than any other crop. His grass was the most profitable, but he could not get good grass without preparing the land by raising corn.

Ayrshire Herd Book.—The committee appointed by the "Association of Breeders of Thorough-bred Neat Stock," consisting of G. B. Loring, Salem, Mass., H. S. Collins, Collinsville, Ct., Wm. Birnie, Springfield, Mass., request all breeders and owners of such stock to send in full pedigrees of each animal, with the fee of fifty cents each, that they may be registered in the second volume of their herd book, on or before the first of July next. All letters and money should be addressed to J. N. Bagg, of West Springfield, Mass., who has undertaken the editorship of the new herd book.

Caledonia (Vt.) Agricultural Society.—At the late annual meeting of the Caledonia County Agricultural Society, the following officers were elected for the year ensuing: E. A. Parks, Waterford, President; H. M. Hall, Burke, W. J. Henderson, Ryegate, Vice Presidents; I. W. Sanborn, Lyndon, T. M. Howard, St. Johnsbury, J. H. George, Hardwick, Secretaries; E. F. Brown, St. Johnsbury, Treasurer.

Resolutions were adopted requesting the Vermont Congressmen to do all they can to secure the passage of a bill to protect the wool-growing interest of the State and nation.

Sterling, Mass., Farmers' Club.—This town club, with a membership of 121, holds an annual Fair. In September last, $264.84 were distributed in premiums, leaving $283 in the treasury. Joseph P. Heywood, President; Luke Sawyer, Vice President; Ezra Sawyer, Secretary; William D. Peck, Treasurer.

For the New England Farmer.

MUCK.

At a recent farmer's meeting, at which the "*preparation of manures*" was the subject of discussion, the debate hung for some time upon the question whether *muck* was of any value except as an *absorbent*.

E. B. considered it as possessing intrinsic value of itself as a fertilizer, and said if the droppings from animals were his only resource for enriching his land, he should quit farming at once. He believed that by drawing muck into his yards and letting it lie a few years, he had tripled the products of his farm. He did not think liquid manure, from any animals, required any absorbent in the winter season, the solid part being sufficient to absorb it all. He believed manure is often too strong, and that muck and manure composted together are better than clear manure separate. He had rather have a load of muck than a load of straw. Said corn planted on muck will always come up, if ever so dry! The best corn raised on Col. M.'s farm was raised on clear muck that laid ten years rotting!

D. H. thought turf, or soil, fully as good as muck; only not as light and easy to handle.

Col. M. thought there was a great difference in the quality of muck.

McC. said much depends upon the nature of

the soil, as to the usefulness of muck, whether loamy, sandy or clayey.

C. M. H. said he had bent his long back a good deal shoveling muck. Didn't think it paid; believed the turf from the roadside, or even the dirt under it, worth more than muck.

G. F. N. thought muck had other value than as an absorbent, and believed it "will pay" to cart it two miles, if not more than half way up hill!

A. B. M. would not use wet, low-land muck at all. Had tried spreading it on grass land without any benefit. Said it was naturally sour, and tends to produce sorrel. Was in favor of decayed leaves and other vegetable matter from high lands.

S. H. thought the chief value of muck is as an absorbent.

C. M. H. would rather have straw, and did not think muck worth looking at, only as an absorbent.

F. D. said swamp muck is over 90 per cent. water, and considered it worthless except as an absorbent. The dirt taken from a well bottom, spread around his yard, produced a rank growth of grass!

A. B. M., C. M. H., S. H. and others made similar statements in regard to the effect of the hard-pan taken from four to five feet below the surface and spread upon cultivated fields.

Mr. Editor, what do you say? If the entire value of muck consists in its absorbing property—it may be of importance to some of your readers to know it, as they can get sawdust, India wheat hulls, refuse straw, &c., that will absorb as much liquid, more conveniently and with less labor. Will it pay to dry and house common soil for an absorbent?

Vermont, Jan., 1867. LECTUM.

REMARKS.—There is a great difference in muck. Some of it is worthless, but not injurious to the soil. Other beds are particularly injurious, as when it is thrown out no plant will spring into life upon it, perhaps for two or three years, until it has been ameliorated by atmospheric action. Good muck that is thrown out in the fall or winter will be generally covered with plants of some kind the succeeding summer.

As an absorbent, muck is certainly valuable. It is our opinion, based upon an extensive use of muck, that two cords of muck and one cord of manure, thoroughly mingled, are as good as three loads of the same kind of clear manure, on any light loams or sandy soils. So think many of the members of the Concord Farmers' Club, if not every one of them. Dana's *Muck Manual* tells us that if two pounds of soda ash, or three pounds of potash are added to 100 pounds of fresh dug peat, *all the good effects of real cow-dung will be produced.*

For the New England Farmer.

THE SUPPLY OF FRUIT.

In seasons like the past, when the apple and pear crop were so much below the average yield, fruit raisers naturally ask the question, What shall we do to secure our usual supply of fruit for family use, or for the market? The first thought is the danger of depending upon one or two kinds. In such case we are liable to an over supply in one season and a deficiency in another. If the land owner, for example, plants only an apple orchard, he may have all that he wants and an overplus besides when the year proves favorable; but he will be annoyed by a deficiency in unfavorable years. The true way to avoid this is to provide as many legs to one's stool as possible; or, in other words, to secure as great a variety of kinds as may be practicable. We do not mean by this a very large number of varieties of each kind, but a large number of kinds. Thus in one year apples may be abundant, but peaches and grapes may be entirely deficient; during another season the reverse may take place; hence it is desirable to plant all the kinds that are easily cultivated. Taking the circle of fruits, and beginning with strawberries and the earliest cherries, followed by currants, raspberries, the earliest pears and apples, and plums, blackberries, and subsequently by the general supply of apples, peaches, pears, plums and grapes, terminating with the late keeping pears, packed grapes and winter apples,—we shall find on an average a certain percentage or rate of failure in different kinds that may be relied upon. In some localities there will not be one failure in ten among these different fruits; while in others the deficiency may be as one to five, or one to three, as the case may be. All we have to do, therefore, is to enlarge our number so as to insure the certainty of a supply from one or more. The year past, for example, has furnished us with a profusion of strawberries; a good supply of currants, when the hellebore treatment was promptly given to the currant worm; raspberries; a fair supply of blackberries; most varieties of the hardy grape, &c. In my opinion, there should be an increased reliance on the grape, for although it may fail in some seasons, the cause of that failure is unlike that which destroys the crop on most of our fruit trees. The latter is often the result of severe winters, and very frequently it is caused by abundant rains about the time of blooming. But the grape is never winter-killed in the fruit buds, nor by the rains of spring, because the fruit is formed on the new shoots, which grow at a later time in the year. We should, therefore, plant them more extensively for family use. New sorts of excellent quality have been added to our list within a few years,

and much has recently been given to the production of early varieties, while those for winter use have not been overlooked.

Let us compare the grape with the apple as to the amount which may be obtained from a given area of land. The most productive apples, such for instance as the Baldwin and Rhode Island Greening, have yielded in good seasons at the rate of some 400 bushels to the acre, while 100 or 200 are a more common crop. Taking 15 or 20 of the more popular sorts, we shall probably not be able to rely on much more than 160 bushels to the acre, through the vicissitudes of different seasons, or not over three or four tons. Now, in ordinary vineyard management, four tons do not constitute an extraordinary crop even for such excellent sorts as the Isabella, Concord and Delaware. Some of these have yielded over six tons per acre. It may be questioned, therefore, whether, on the whole, the apple orchard will yield more than the vineyard; the latter, it is admitted, requires far more care in cultivation and pruning, and more attention also in preserving the fruit. But we are all learning that fruit should have as much care as corn, turnips, and potatoes, and are becoming willing to give it. While, therefore, we would not diminish the amount given to strawberries, currants, raspberries, gooseberries, blackberries, cherries, apples, peaches, apricots, plums, pears, &c., we especially recommend at the present time a larger attention to the best hardy grapes.

Otis Tinkham.

Lakeville, Mass. Jan., 1867.

For the New England Farmer.

EXPERIMENTS WITH FLOUR OF BONE.

The past season I bought one barrel of flour of bone, made by the Boston Milling and Manufacturing Company; it cost me $11.92. Being partial in its favor, I thought I would give it a fair trial. My farm is mostly of a dark yellow loam, having been formerly covered with a growth of beach, birch, maple, oak, pine, &c.

I planted a piece of corn which had a heavy coat of horse and sheep manure ploughed in. Of this field certain rows were served with a limited amount of compost, made of leached ashes and hen manure; other rows with a compost of night soil and gravel; certain other rows with about a tablespoonful of flour of bone, all being applied in the hill; and other rows were planted without anything in the hill. The result was that where the hen manure and night soil were put the corn got the best start and kept it through the season. At harvesting time I kept two rows served with flour of bone separate, and two rows without anything in the hill. I husked and measured them by themselves, and the difference in the amount of corn from the two lots was almost imperceptible.

On another piece I planted potatoes, on part of which I put a single handful of a compost of sheep manure and leached ashes in the hill, and on the other part of the piece I put about a tablespoonful of flour of bone in the hill. Otherwise there was no manure used on the piece,—which was ploughed the fall before. At digging time, where the sheep manure and ashes were put the potatoes were the best.

On another piece I planted beans. This was well manured with barn-yard manure, skipping certain rows, and noting the product at harvesting time, between the rows to which bone flour was applied and the rows without the flour, and for the life of me I could not tell the difference.

I ploughed up one and three-fourths acres in my pasture last May and planted it with potatoes. I used bone flour on most of it, but left certain rows with nothing in the hill; and certain other rows had about twice as much unleached ashes in the hill, as I applied of bone flour. The result stands thus: nothing in hill, No. 3; flour of bone in hill, No. 2, and unleached ashes in the hill, No. 1. This piece had no other manure than bone and ashes. I am satisfied I am out of pocket for a part of the $11.92 up to this date, but what I *may* get of it in the future I can't tell. If we could have the whole substance of the bone as it comes from the animal, and not lose a great share of the glue and oil by the process of manufacture, undoubtedly our crops would be more satisfactory than they now are.

Bradford, N. H., Jan. 8, 1867. J. F. D.

For the New England Farmer.

FLOUR OF BONE.

Messrs. Editors of New England Farmer:— Your correspondent, Mr. Rufus Nutting, of Randolph, Vt., gives some statements in the last issue of your valuable journal, in reference to Flour of Bone; being, as he states, results of his own personal use of it the last season; and it not being up to his expectations, Mr. Nutting proposes to write solely in the interest of the farming community, *pro bono publico*, and disclaims all intention to injure persons or corporations. We take him at his word, and shall answer him as a man really and honorably anxious only to get at the truth. Mr. Nutting, we presume, will not deny the importance of bone as a manure. That point is too well established to admit of discussion. All scientific authorities, particularly Liebig and Johnston, place it at the *head* of the list of *special* manures, and devote great space to the exposition of its merits. All practical, intelligent farmers equally acknowledge it. In England and the Continent of Europe, where bone has been used very extensively for more than half a century, its value is considered beyond a doubt. In Germany it is rated so high that by law its exportation is forbidden.

The use of bone in all countries, however, has been confined to that which has been simply crushed, or broken into fragments of considerable size. But all the authorities agree in the great advantage of having bone reduced to a powder by mechanical means. Although it has long engaged the attention of inventors, no machine has been made which would reduce bone to powder till the invention of those used solely by the Boston Milling and Manufacturing Company.

Now what the public wishes to be assured of is, whether this pulverized bone, manufactured by this Corporation is *pure* and *unadulterated*. To this we reply, that from the first we have advertised everywhere that its *perfect purity* was preserved; no *adulteration* or *admixture* whatever being introduced, except *five per cent.* of *common salt*, as a preservative when packed in barrels. A guarantee to this effect can be given by this Corporation. We have constantly solicited investigation, and it has been a subject of inquiry by many. We have been permitted by all the agricultural newspapers in this city to refer to them upon this subject for now nearly one year, because they have given our mills, our process and our Flour of Bone a thorough examination.

We should be glad to give Mr. Nutting an opportunity of examining, and here offer him and his friends, through the medium of your columns, a full and free invitation to inspect our works, processes and their results. We guarantee *one thing*, at least:—to satisfy them that we furnish perfectly *pure bone*, ground fine by a strictly mechanical process, without burning or using acids. Of course we do not guarantee that it will prove a success in every description of soil or in every season. Did Mr. N. ever know of any manure which could be absolutely promised to produce the same effect *under every and all* circumstances, all differences of soil, climate, &c., &c.? Is it fair to condemn our article, because, as he states, it once failed with him? We think not. Not to occupy too much of your paper in our matter, we conclude by expressing the hope that Mr. N. will give us an opportunity of becoming acquainted with him personally. For we believe that he will then be satisfied that we, too, also have an interest in the well-being of agriculturists generally, and if honest efforts can prove this, he may rest assured of our making them. Respectfully yours.

A. F. Devereux & Co.,
Agents Boston Milling and Manuf'g Co.
Boston, Mass., Dec. 14, 1866.

FERRETS AND RATS.

Rats are a great nuisance. My pig-pens and buildings are overrun with them. I often wish for a pair or two of ferrets and a couple of good terrier dogs. We could have some glorious sport. When I was a boy, in England, I used to keep ferrets, and can well remember many days when I was too sick to go to school; but cannot recall a day when I was not well enough to go "a ferreting!" We used to stack nearly all our grain, and as it was never threshed until the winter, and frequently not before the next summer, the stacks that were on the ground were a favorite haunt for rats. I have seen old stacks that were completely riddled with rat holes—sides, top and bottom. Such a stack afforded real sport for us youngsters. Armed with a good stick, we stood one on each side of the stack. The ferrets, having been fasted over night, were turned into the holes. They would creep along there slowly at first, but as soon as a rat was scented they were more active, and when the game was fairly started Master Rat, or Madam, must make good pace to save their skin. With a rush he leaps from the stack, when a terrier makes short work of him. When the sport is lively, half a dozen or more are on the ground at once, and dogs and boys have all they can do to attend to them.

The smaller the ferret the better, as she can follow the rats more easily and rapidly through the holes. The large male ferrets are seldom as good rat catchers—or more properly, rat *frighteners*—as the small female ferret. If kept perfectly clean and in a warm but well ventilated pen or box, and fed regularly with a little new milk and scraps of fresh meat, birds, heads of chickens, blood, etc.; there is no difficulty in raising them.

Why cannot we keep ferrets in this country? The only difficulty I can think of is our severe winters. But it would seem that this could be overcome by keeping them in a barn cellar and furnishing them with plenty of dry bedding, in which they can burrow and form a nest.

I see ferrets are advertised at $20 a pair! When I was a boy I frequently raised seven, and in one case nine at a litter, and used to feel rich when I could sell the young ones for $1 50 per pair. They breed twice a year; and some of our young farmers' sons, especially in the milder sections, would find a pleasure and profit in keeping them.—*Joseph Harris, in American Agriculturist.*

BEST WAY OF SEEDING DOWN.

The Harvest Club of the Connecticut Valley discussed this subject, at a late meeting at Thaxter Shaw's, in Montague, Moses Stebbins in the chair. As reported by the *Boston Cultivator*, Thomas J. Field, President of the Franklin County Society, opened the discussion.

He recommended 12 lbs of clover seed, 6 quarts of herdsgrass, and 1 bushel of red top to the acre; also that farmers raise their own seed. The best clover seed in market, he said is that grown in Putney, Vt. Farmers growing their clover seed need not separate the

chaff from it, but should sow both together. Time for sowing herdsgrass, from the 10th of Aug. to the 1st of Sept.: some sow after the 3d hoeing of corn; also with turnips in August. The soil should be well prepared for seeding. He gave an instance of a piece of worn out land that a farmer ploughed 7 or 8 times in one season, sowed it to rye and seeded it down to clover, and got heavy crops of both rye and clover. He advised to use 300 lbs. of Peruvian guano per acre on thin soils, or about twenty bushels of ashes. He would use a bush and roller after seeding down, but preferred the bush if but one is used. Mr. Stedman of Chicopee preferred the roller to the bush.

J. M. Smith of Sunderland, said he cared not to cover hay seed at all—preferred to bush before rather than after sowing it: the fall of rain covers it sufficiently for vegetating: the danger, he remarked, is of covering it too deep. He said red-top runs out clover.

Mr. Taylor of Montague, said he stocked down in the fall, manured with composts, about half as much as in growing corn, say 5 cords per acre, and covered the seed with a horse-rake; he puts sand in his hog pen, and regards muck as good for nothing until put in the barn-yard: oats smother grass—wheat and barley he deemed the best grains to seed after. He thought clover winter killed worse by leaving a rank growth uncut, than by mowing and removing it.

Mr. Soverins of So. Deerfield, used a larger number of kinds of seeds than farmers usually do, whether for meadow or pasture: herdsgrass stools, hence open spaces that should be filled: to seed down for one or two years he would use only clover: on moist land he would use red-top and fowl meadow; till the soil well as for tobacco beds; would bush after seeding: preferred a clod crusher to a roller.

N. A. Smith of Sunderland, regarded herdsgrass as an exhausting crop.

T. K. Brown, of Bernardston, recommended fall seeding, whether the ground be moist or dry. He thinks farmers err in not sowing more red-top; he thought he had tons more of hay the past season for having seeded with red-top, as it is not liable to freeze out, and produces from 2½ to 3 tons per acre; it grew with herdsgrass from 4 to 5 feet in height; in seeding he sowed from 8 to 10 lbs. of clover seed per acre, with from 8 to 12 quarts of herdsgrass and the same of red top: preferred to seed with wheat: seeds also with turnips about the 1st of August, and would neither bush nor roll wet land: would feed off or mow a fall crop of clover rather than let it remain on.

—W. C. Flagg, of Madison Co., Ill., the owner of a large and profitable farm, estimates that, by the use of mowers, hay-rakes, and horse-forks, he can cut, cure and stack hay at a cost of from $1.00 to $1.50 a ton.

WINTER FEED AND CARE OF SHEEP.

The farmer, during a considerable portion of the year, has the whole care of the food of sheep; selects and lays it before them. It has been dried and stored away for winter use, and is fed to them at stated times, so that they have no choosing to do, but must eat such as they can get or go without.

When in the pasture they have a choice; certain plants they reject and modify the quantity of others as their appetite requires,—but during the winter this is entirely under the control of man. In order to produce healthy sheep and good wool, roots are essential in addition to hay and grain. Good muscle-producing food is necessary for wool. Sheep like the potato, turnips of various kinds, beets, carrots, parsnips and mangold wurtzel. A prejudice exists against the use of these roots, which grows out of the erroneous idea that it is very expensive to raise them, and that they are not very nutritious. The argument is, that because the potato contains 80 per cent. of water it is not nutritious and cannot be economical. The same reason may be urged against grass, or against the beef-steak for our own eating.

Numerous experiments show that all stock, even poultry, fed partly upon succulent roots, thrive better and at less cost, than when fed entirely upon hay and grain. "There is something more required in the animal economy than mere nutrition. In some inexplicable way roots are either capable of enabling the animal to extract more nutriment from its other food, or of economizing that which it does extract." Our own practice through many years, satisfies us that, with the aid of modern implements, roots can be raised cheaper than Indian corn, cereal grains or beans as part food for sheep.

Sheep like variety and should be indulged in it. Not to feed a few days or a few weeks on one kind entirely and then change to something else, but to feed a *variety every day.*

Mr. T. L. Hartwell, of West Cornwall, Ct., writing us, says: "There are none of our domestic animals whose nature seems to require so great a variety of food as the sheep. They will grow restive and uneasy if confined,

even in the best feed, if of one kind, and break out, if possible, and roam over the dry pastures, perfectly contented if they can get sufficient variety to supply the demands of their nature. No amount of grain or roots will compensate for the want of variety."

It has always been our practice to supply the flock with evergreens of hemlock, spruce and the various pines, after they have been feeding for several weeks upon dry food. They will browse them eagerly if scattered through their yards, after January comes in, and they seem to renew their appetite and remain more contented for the indulgence. Sheep should be fed when in fold at least three times a day, and always at the same hour. No animal knows better than a sheep his usual meal-time, or is more impatient of its postponement. The appetite comes with the appointed hour, and the food is then eaten with the greatest relish and least waste.

We say nothing of *weight* or *measure* in feeding. This must be governed by circumstances, but chiefly by the temperature. In cold weather they will require more food; in mild weather less. The lower the temperature the more rapidly heat escapes from the body, and the more food is required to keep it up. Much may be done toward equalizing the heat of the body by proper *shelter*. Sheep will endure a great degree of cold if the weather is dry, and will leave the barn in clear cold nights of winter, when the thermometer ranges near zero, and lie upon the litter in the yards. If allowed to go out of the yard, they will frequently seek some dry elevation to pass the night, even when there is a stiff breeze. But if rain or snow is falling, or if the atmosphere be damp they will seek shelter in their sheds or barn, although the weather may be warm. Their accommodations should, therefore, be so arranged, that they can go in and out at will. Their instincts will govern them correctly in this particular, with the exception, perhaps, of ewes who may come in early.

If these conditions are not observed, the wool will suffer, the food which the sheep eats will, instead of making wool, go to produce heat to keep the body warm. If the sheep are merinos the result will be a weak place in the staple, and dry harsh wool; but if the long-wooled breed, then in the bottom of the staple will be produced another crop of wool, consisting of fine fibres locking with those already produced, which will felt to such a degree as almost to defy the power of man to tear the fleece in pieces when shorn! If the sheep is not sufficiently fed to produce both heat and wool, nature will apply the food where it is most required.

This is the result of food not sufficiently nutritious, as it is also of old sheep and of ewes drawn upon heavily by lambs—in short, whatever interferes with the supply of nutritious food or prevents a proper assimilation and application to the system, tends to produce poor wool. If we desire good wool and heavy fleeces, sheep must leave their winter quarters in as good condition as when they entered them.

In another article, next week, we shall speak of the injurious results sometimes arising from *sudden changes in food* and from *changes in temperature, &c.*

AGRICULTURAL ITEMS.

—Losses by cattle disease in England are summed up at $17,865,000 in gold.

—The Detroit *Tribune* estimates the wheat crop of Michigan, for 1866, at 12,000,000 bushels.

—The Richmond *Enquirer* has made the discovery that New England farmers "are generally poor, ignorant and unintelligent."

—The Secretary of the Iowa Board of Agriculture claims that full one-third of the receipts of wheat at Chicago are from Iowa.

—Every child that eats fruit should be taught the importance of saving and sowing seeds and rearing them up to fruit bearing.

—In 1860, the United States had more cattle and hogs than any other country. It is thought they now have more sheep.

—It is claimed that Chase Co., Kansas, with a voting population of 226, sold $150,000 worth of cattle, wool and sheep, last year.

—Twenty years ago there were no vineyards in the Department of the Indre, in France; at the present time the extent under vineyards is about 60,000 acres.

—On the pine lands of Georgia, which possess a quick, warm soil, two crops are frequently obtained. A wheat harvest is gathered in June; a corn crop is then planted which ripens by the last of October.

—The State Horticultural Society of Iowa passed unanimously a resolution approving the decision of the Committee in New York, who awarded the "Greeley Prize" to the Concord Grape.

—A Kansas correspondent of the New York *Tribune* says, it is not generally known that wild grasses improve in quality as one goes West. As far West as Colorado the dead grass is nearly as good as oats. In Kansas some good farmers think

the native grass as valuable as timothy. It is certain, however, that Fall frosts take out its life, and cattle quickly fall away. But it is singular that combined with a very little green grass in early spring, cattle quickly get fat.

—The plan of planting a few acres with forest trees, to be used as fuel, and allowed to grow up again, thus furnishing a perpetual supply, is strongly recommended to prairie farmers by some recent writers.

—A Scotch paper says a farmer in that county found two lambs in a culvert where they had been, without any food, for 21 days. A third lamb had died, but these two were still alive, although very weak.

—Hon. Sanford Howard and T. T. Lyon have presented a memorial to the legislature of Michigan for the adoption of some measures to prevent the needless destruction of forest trees in that State.

—The *Utica Herald* quotes Messrs. Corderoy's *Annual Circular*, London, January 1st, as saying that American cheese "where the description is really choice, is as readily taken as first-class Cheddar by ordinary consumers."

—A writer in the *American Stock Journal* says that costiveness and its accompanying evils are the main cause of sows destroying their young, and that green and other proper food are the preventive and cure.

—A correspondent of the Ohio *Farmer* thinks a sow should not be allowed to breed until at least a year old. He thinks that until the boar and sow reach the age of four or six years, their progeny is better than from young hogs.

—J. Harris says, in the *American Agriculturist*, that, on the whole, he does not think it will pay to cook food for neat cattle. He has tried it with milch cows, and thinks it too much trouble. Cooked food for hogs pays best in his opinion.

—Comstock's Rotary Spader, from which much was expected a few years since, as a substitute for the plow, does not seem to be adapted to small farms, nor to those in which there are any stumps or stones. It is liable to choke with weeds or grass, and does not prove to be sufficiently substantial.

—The agricultural statistics of France for the past year are decidedly unfavorable. The grain crop is below an average; potatoes rotting in the store houses; tobacco also affected with a rot; and the silk business presents, perhaps, the darkest feature of the picture.

—A. S. Fuller, of Bridgewood, N. J., offers, through the New York Farmers' Club, one hundred dollars for the best four quarts of raspberries, for general cultivation, as a market fruit. The only restrictions are that the plants shall be hardy and prolific.

—C. Booram, Jr., of a flax mill in New Jersey, told the New York Farmers' Club, that in Western Illinois they are beginning to learn the value of the flax crop. Establishments have been erected for working up flax, which this year yielded a profit of from $30 to $40 an acre.

—The Executive Committee of the Illinois State Agricultural Society, at their recent meeting at Springfield, passed resolutions strongly urging that the funds for the establishment of an Industrial University in the State should be kept together, and that no scheme for their division should be listened to.

—The average price of domestic fleece wool in the United States from 1827 to 1861, was, for fine, 50 3-10c.; for medium, 42 8-10c.; and for coarse, 35 5-10c. Average price for four years, from 1861 to 1865, (during the war,) for fleeces, 63 to 83c.; for pulled, 56 to 61c. Average price for the year 1866, Fleeces, 45 to 72c.; pulled, 29 to 64c.

—A correspondent of the *Country Gentleman* who has this year 1700 bushels of beans to feed to his sheep, considers them worth equally as much as corn. He says it is necessary to feed carefully at first, mixing in some lighter feed, till the sheep become accustomed to them, as beans will clog them sooner than any grain he ever used.

—The rose bugs destroy the grapes of a Newersink, N. J., correspondent of the *Country Gentleman*. He says, fumigation and sprinkling with villainously smelling compounds do not seem to have the least effect. Why, you can soak the little rascals in a mixture of kerosene and sulphur, and they will, after a six hour's bath, come out as lively as ever.

—In consequence of the effects of the cattle plague in England, which appears to have been more disastrous to the products of the dairy than was anticipated, the markets of that country enter upon the year with a meagre stock of inferior quality. American cheese is taking its place by the side of the best English made, and commands so high a price that the *Utica Herald* quoted the price at Little Falls, January 21, at 20c per lb. In London, January 1, from 58 to 74 shillings per 100 lbs.

—A Norfolk, (Eng.) correspondent of the *Country Gentleman*, says that the average rent of farms in that county, the soil of which is by no means first rate, is between twenty-five and thirty shillings—four to five dollars per acre—the tenant paying, tythes, taxes, &c., and finding all the live stock, implements, &c. The old calculation that the tenant ought to have a capital equal to $50 per acre is found of late years to be too small. He says that the rental system, on the whole, "works admirably well."

Good Steers.—Mr. C. P. Whitney, of Westminster, Vt., has a pair of steers, 19 months old the first of November, weighing 2196 lbs., being a gain of nearly 50 lbs. per month since the first of April on simple pasture feed.

EXTRACTS AND REPLIES.

PROFITABLE HENS.

I have five hens that laid, on an average, three eggs a day through the fall. About the first of December I removed them to a new house 12 by 6 feet, and 4 feet high, which is "airy, dry and sunny, and protected from winds and dampness." Have used a "variety" of food: "boiled potatoes, mashed with corn meal; dry corn, oats, barley and scraps;" clams and clam shells, "gravel," and "ashes in one corner of their house." Results:—Have had but three eggs since they have occupied their new house. Whose hens can beat mine?

My Farm, Ct., Jan. 21, 1867. EXPERIOR.

REMARKS.—The "old speckled hen" of the song is seldom equalled by any of her prosaic descendants, though furnished with the nicest apartments, and allowed to fare sumptuously every day. Mr. Bement puts 80 to 100 eggs as the average production of hens per year. Possibly your hens thought that, after manufacturing "three eggs a day through the fall," they had as good a right to the holidays as Congressmen, or their master's family.

MANURING LAND FOR GRASS—GREEN OATS OR HUNGARIAN GRASS FOR FODDER.

I have a piece of pretty good corn land which I design to seed down to grass next spring. I have no barn manure to spare to put on it. Will 300 pounds of flour of bone and three bushels of salt per acre, be sufficient dressing to make it produce a fair crop of hay, say average a ton per acre for four or five years? The land was broken up and manured in the hill, and planted with potatoes last spring.

Which will be most profitable for fodder, oats cut in the milk, or Hungarian grass? J. P.

Southampton, N. H., Jan., 1867.

REMARKS.—The above are difficult questions to answer. If the land was highly manured and well tended when planted with potatoes, we should think that 300 pounds of bone and three bushels of salt, per acre, would give a yield of one ton of hay per acre, for three or four years—perhaps longer. If the bone and salt were *composted* with *one cord* of good muck, and spread evenly over the land in March or April, we should expect a larger crop and one that would continue longer.

We have no exact data upon which to form an opinion with regard to the comparative value of oats cut while the seed is in the milk and Hungarian grass. While we know that both are excellent, we should select the grass, if taking a choice.

A SICK CALF.

Last spring a gentleman in Agawam, Mass., gave me a full blooded Durham bull that was three weeks old. He was large, but not very active, being very weak in his back. A few days after I had him, a bunch appeared on the right side of his jaw or cheek. Though kept in a warm place, he coughed and shivered most of the time. The weight of one's hand on his back would make him crouch nearly to the ground. He drooled much. His eyes were heavy and run. What passed him was white and frothy. He drank milk well, but could not eat. He was put it a pen with a heifer calf of about his own age. She soon showed the same symptoms, but in a milder form—both her cheeks being swelled. I took her away and washed her head well in cold water, and she soon got well. But although he was also washed, he continued poor and weak all summer. He had more milk than she did, and run in the same pasture with her. In the fall, when I put them in the barn, she was in good condition, but he was poor. I gave him extra feed and care, and he ate well and chewed his quid naturally. When he drank, however, something troubled him. The difficulty I think was in his throat, as he always drank very slowly, and often choked. He grew poorer all the time, and died a week ago. He ate hay and turnips well the day he died.

No one here ever saw anything like it before. Can you or any of your readers give me any information as to the nature of his disease?

Jaffrey, N. H., Jan. 23, 1867. A. B. DAVIS.

PACKING CABBAGES FOR WINTER.

I saw in your paper directions for keeping cabbages. I have tried all ways recommended, but yours, and also a way of my own. It strikes me yours is the most economical, if not the best in other respects. Will you please to answer me through your paper, the following questions: Do you wet all the straw in packing, or only the bottom? Do you head up the barrel entirely to exclude the air? Do they wilt any, packed that way? Which is best, straw or hay? PHINEAS PRATT.

Deep River, Mass., 1866.

REMARKS.—The above got mislaid or it would have been attended to before this time.

Wet every layer of straw, and cover the barrel with a layer three or four inches thick. They do not need to be headed.

The plan in a cheap and excellent one. We have barrels of cabbages in that condition now.

We prefer straw for packing, though hay answers well.

FEEDING BEES.

A neighbor had a large colony of bees that came out in September, 1862. They were hived in a nail keg which they filled three-fourths full with comb. Frost occurring early, the bees had but little honey in the comb. Now here was a dilemma. A young Italian queen, for I had reared it, and probably a hybrid in the old hive. The original colony was in the Langstroth hive. I put them in a good warm bee-house and took the super, or cap, off from the Langstroth hive, and set the keg on the honey-board, with holes open under the keg. I expected that the bees above would go below, but the swarms in the spring were separate, and in good condition. I bored a hole in the top of the keg and put on a small box of honey, which the bees took as needed.

Did the warm breath of the bees below contain nutriment for those above? My experience is that when bees are kept at the right temperature, they consume but very little honey until they commence rearing young. C. G. McN.

Big Spring, Johnson Co., Iowa, Jan. 21, 1867.

FILMS ON EYES.

Thirteen years ago, having a horse that had a film commence on the eye, I tried the fresh butter remedy, but to no purpose, as she became entirely blind. Last October one of my horses scratched his eye badly. It wept very freely, and finally a film grew all over it. Several remedies were recommended; among them the fresh butter prescription, but I used none of them. The eye was carefully washed in cool water several times a day, and in a short time his eye was well, though a scar

remained on the eyeball, but not at all injuring its sight. I have another horse that scratched his eye a few days since, but I thought I would not torment him with "tobacco," "checkerberry leaves," or "butter," and it is fast getting well; the film being nearly gone.

I think it much the best way to throw the drugs in the barn-yard, and use nature's own remedy—pure, soft water, hot or cool, as the case may require. If "Z. B." had used water instead of butter, perhaps his colt and dog would have done as well, or better. A. B. Davis.

Jaffrey, N. H., Jan. 23, 1867.

EGG-HATCHING MACHINE.

Can you or any of the readers of the New England Farmer inform me where I can buy an Egg-Hatching Machine, and what is the price of them? Jacob C. Cilley.

Exeter, N. H., Jan. 28, 1867.

Remarks.—Some months since we gave a cut of such a machine, more as a matter of curiosity than of practical value. The most economical egg-hatching machine within our knowledge, and the only one that we can conscientiously recommend, is an old-fashioned *egg-making machine*, which travels on two legs, is covered with feathers, and may still be found in almost every neighborhood in New England. If we hear of a better one, you shall at once have the benefit of our discovery.

PLASTIC SLATE.

Having seen notices of this new roofing material, I wish to inquire how it is put on, what is the cost per square or foot? Can it be put upon a leaky felt coal tar and gravel roof, and is it applied to flat as well steep roofs? A Subscriber.

Remarks.—The pamphlets of the company give directions in detail; but we shall venture to advise you to employ a workman, as you would probably do in case of plastering the walls of your house. Messrs. Hinkley & Makepeace, agents, 23 State Street, Boston, inform us that the cost is from six to eight cents per foot, or $6 to $8 per "square." The old felt should be removed, and two thicknesses of the new applied. It can be used on flat as well as steep roofs.

BOTS IN HORSES.

Those who have seen the noble horse fall a victim to these torments, will gladly hail any proffered remedy which shall hold out a reasonable prospect of relief. A new one, (to me, at least,) comes well recommended through the Agricultural Department, which, if it proves successful, will be of great public value.

It was communicated by Brevet Col. J. Hamilton to Prof. Glover, entomologist of the Department, Raleigh, N. Carolina, and was published in the Monthly Report for November and December, 1866, as follows:

"I observe in your report for 1864, that you say that no very certain means of ridding the horse's stomach of the bots has yet been published. Since receiving the following from Dr. Gee, of Florida, I am glad that I have had no opportunity of trying it, but it has the air of efficacy, and I certainly *shall* on the first opportunity. You are aware that it is hard sometimes to distinguish between an attack of the bots and one of the colic; this remedy, however, is equally efficient for either. The reason that a bot can resist the action of agents administered is his power of drawing his head into the walls of the stomach by his tentacles. But he cannot resist the chloroform. A tablespoonful of chloroform screened by a couple of spoonfuls of any good mucilage will make him let go his hold on the stomach even after having bored nearly through."

If you turn to the Agricultural Report for 1864, page 563, it will be seen that Dr. Harris says that "no sure and safe remedy has yet been found for removing the bots from the stomach."

Let any one who has an opportunity to try this simple remedy, do so at once, without fear of its deleterious effects, and report results; also, if any of the readers of the New England Farmer have tested it, or seen it tested, let them report.

Farmington, Me., Jan., 1867. O. W. True.

A NEW HAMPSHIRE PIG.

W. H. H. Peabody, of Wilmot, N. H., killed a pig 8 months and 20 days old, that weighed, when dressed, after hanging one day, 505 pounds. Length of pig 6 feet. Thickness through hips and shoulders 22 inches. Fed on milk and potatoes until Sept. 1. Since then has eaten 4 bushels of barley and 13 bushels of corn. H. W. Mason.

Wilmot, N. H., Jan. 1, 1867.

For the New England Farmer.

THE RESOURCES OF THE FARM FOR FERTILIZERS.

It has become very well settled by experience, that commercial manures cannot be profitably relied upon to maintain and increase the fertility of the soil in New England.

Our soils will not continue to yield remunerative crops, unless an annual return is made to them, equivalent to the draft annually made upon them. Commercial manures may be used to complement the use of home-made manures, or as stimulants to hasten the maturity of some crops which it is desirable to get ready for an early market, or to secure from early frosts. Except the preparations of lime, they confer no permanent benefit upon the soil, and contribute nothing to its permanent improvement. The great question then for every farmer is, what resources have I within the limits of my own farm, or in my immediate vicinity? These resources will differ considerably, owing to location or topographical situation. One is a hill farm, another is on lowland, and consists of intervale, or meadows. Another consists largely of sandy plains, a fourth is upon the sea shore, and a fifth is in the vicinity of some city, or manufacturing establishment. And again the use to which the farm is put, affects in no small degree its resources for fertilizers. One is a milk farm, another is used in producing market vegetables, a third is a stock farm, and the force of another is employed in raising corn and potatoes. Let us look somewhat in detail into the resources of these several farms. The farm upon the hill is a good grazing farm. It yields sweet grasses, which spring early, but are not so early affected by the frosts as the grasses on the lowlands. Hence, young stock and sheep thrive, and cattle are cheaply fattened in its pastures. Such farms have a source of fertility which is often overlooked by their owners,

although the gurgling rills, and the green stripes upon the declivities constantly invite their attention to it. Irrigation is the great resource for such farms. A small dam across a ravine would often enable the owner to throw the water, in the spring or after the summer rains, over many acres lying upon a lower level, which would give him successive unfailing crops of sweet hay or rich pasturage. A pit sunk a few feet in a side hill and where there would be a fall of thirty or twenty or ten feet, would enable him to throw the water which now breaks out at the foot of the hill, over other acres, with the same result—and this with but a trifling expense. There are hundreds of farms in Worcester county, and in the hilly parts of the State, where ten, twenty or thirty acres of good grass land may be irrigated at very little expense. This irrigation would be equal to a top dressing of manure annually, worth from ten to fifteen dollars per acre. A dressing of this value to such a number of acres, would be properly appreciated by every farmer in the State; and yet, in how many instances do farmers neglect to avail themselves of that which would be of equal value, although the labor would be much less than it would be to haul and spread the manure, even if it were furnished to them gratuitously. Leaves and soil from the forests, loam composted with barn manure, and irrigation are the principal resources of hillfarms.

Intervale and lowland farms, and farms containing meadow and swamp lands, on the other hand, require draining to get rid of the cold surface water, and sweeten the soil. After drainage, dressings of sand or gravel will be found very efficacious. When meadow lands have, by draining and dressing with sand or gravel, become sufficiently consolidated for the plough, barn manure will give large crops of corn, oats or potatoes; and these may be followed by grass, with light dressings of sand or loam, with a plowing once in five or six years. Such lands, if kept properly drained, and occasionally plowed, will be among the most productive of lands for a long time. But the plowing once in a few years, must not be neglected, as there is a constant tendency in such lands for the coarse grasses to come in and kill out the finer grasses, which can be prevented only by occasional plowing and dressing with manure. Large quantities of good hay may be raised in this way, with the use of but small quantities of stable manure. This hay will add much to the means of the farm for raising other crops.

Draining and mixing of soils, then, are the great resources of low-lying farms.

Farms consisting of sandy loams and pine plains usually contain more or less wet meadows and swamps, for the reason that they are so level that the surface water accumulates in the hollows, and forms bogs and swampy places. And thus, as it were by special design, nature provides the means needed and best suited to supply the most urgent wants of such soils. This want is humus or decaying vegetable matter. This is collected and preserved in the swamps and bogs in the form of peat and muck.

This, pulverized by the frost and used alone or composted with barn manure, is the great resource for such farms. They are little retentive of manures, but allow the salts to leach through them in a short time. Peat lasts longer in them than barn manures. Hence composts are better adapted to such soils than crude stable manures. Clay, too, is valuable in improving such soils, as it is retentive of both ammonia and water. When this can be readily obtained, it should be put in heaps or beds of about a foot deep, and allowed to lie for a year or more, and be frequently stirred with the plow or harrow, to break the lumps and make it fine, and then spread upon the surface and plowed in. Thirty or forty loads of clay applied in this way, to an acre of dry sandy soil, will sometimes work a wonderful change in its fertility. The plowing in of green crops is another valuable resource for such farms. Two crops of buckwheat may be plowed in, in a year. The next year, dress with lime and seed with clover, and plow under in July. And in September, seed down with clover and red-top, and you may take off the following year a good crop of hay, and have a good pasture for several years. Such farms are easily worked, and with light dressings of manure, and the liberal use of peat and clay may be made very productive. Where farms lie upon the sea-coast, the waves furnish an unfailing resource which can be easily and profitably used. Within eight or ten miles of the city stables, they furnish the best resource for the market gardener. This manure, when well rotted, and composted with vegetable waste, will bring forward the vegetable crops more rapidly than any other material, and the good cultivator will apply it in sufficient quantity to keep his land always growing better. If superphosphate, bone flour, ashes or plaster are occasionally added, it is all the better, but they cannot be depended on alone by the market gardener. Large quantities of stable manure must be used at the same time. Farmers in the vicinity of soap works, woolen mills, and other mills, will, of course, avail themselves of the resources which such establishments afford.

The milk farmer, especially if he soils his cows, has a resource within himself. A judicious use of dry peat or loam in the barn cellar, enables him to make a large quantity of valuable compost, that will constantly increase his crops of hay or other fodder, by which he will be able to increase annually his stock of cows, and consequently his quantity of compost. Lime in any form, and ashes when they can be obtained, may be used with great advantage, especially on soils that have been exhausted by long pasturage and cropping. And now, brother farm-

er, which of these resources have you upon your own farm, of which you have not yet sufficiently availed yourself? If you find that you have one or more of them, have the courage to resort to them at once, and you will never regret it. R.

For the New England Farmer.

THE GARDEN.

Every one who lives outside of the most thickly settled limits of a city or village, and owns a small piece of ground, usually devotes a portion of it to a garden; and in these times of high prices is supposed to want to make the most he possibly can from it. In order to do this, the ground must be thoroughly worked, and but little devoted to each kind of produce, as we usually desire to produce a variety. The farmer who owns his broad acres is under no necessity of crowding his garden, as he is who owns only a city or village lot; but can have a goodly sized garden with one department devoted to the production of kitchen vegetables; another for fruit, and yet another for flowers. But with the generality of farmers a small portion of ground is all that is usually devoted to the garden, and too frequently this is not made the most of. But I am happy to say that of late years there is more interest manifested in growing a greater variety of vegetables, fruit, &c., and giving the garden better culture and attention.

The garden that satisfied our forefathers will but illy satisfy the more cultivated or dainty appetite of the present age. Few at the present day rest satisfied with the salt meat and potatoes of former days, which constituted the farmer's boiled dinner. A greater variety is craved, and as a general thing we find it conducive to *health* to gratify the appetite in this particular. The gardener or agriculturist performs but *little* work except with reference to future results. If he plants, or sows, he does it with reference to the returns it will make in the future, and patiently awaits the result. The winter, being a comparatively leisure season with the farmer, is the time he should give to study and planning for the coming busy season. Let, then, those who have not a garden suitable for growing a sufficient variety of vegetables, fruits, &c., locate a new one or enlarge the old, and plan it with reference to all the different varieties of vegetables, &c., desired to be produced for a good family supply, from early spring to late autumn, with a supply to store away for winter use. A small portion of ground devoted to a garden and *well* tended will give very much greater profit to a family, than any other equal portion of the farm, aside from the pleasure it affords in having its productions fresh and seasonable. Many things needed for the successful culture of the garden may be got in readiness for spring use, by making new, or repairing old ones.

Hot-Beds.

No garden is complete without one. They are desirable for starting many kinds of plants and vegetables early before the weather will admit of open air culture. The frames may be got in readiness. If new ones are to be made, they may be made of matched inch boards or plank, the front 12 inches and the back 24 inches high, with the ends slanting to match. The frame should be wide enough for a sash of sufficient length for five panes of 6 × 8 glass, and of any desirable length; cross bars are placed from front to rear of the frame for the sash to slide upon; and the upper edges of the front and rear sides bevelled to make a close fit. A stock of fine rich garden mould is needed to make the bed. If not already provided, this may be procured when a thaw occurs and put under cover, and turned over occasionally, where it may be had when wanted, for use, otherwise it may be frozen or wet. Cold frames are useful for keeping many kinds of plants under during winter and early spring or other times; these are of similar construction as the hot-bed frame, with this difference, the back side is not as high by 4 to 6 inches.

Manure.

Here lies the secret of success in good crops both in the garden and field—abundance of manure. Lay in for a good supply and increase it by every known means of saving and adding such materials as may be converted into plant food. Good loam, sods, muck, &c., added to the barn yard, stables, piggery, privy, and hen roost, will add to the supply without deteriorating the quality.

Poles for beans, brush for peas and other trailing plants needing something to run on for support, can be procured and prepared now better than during the more busy season of spring or early summer when wanted for use.

Seeds.

A stock can be procured, if to be purchased, now, better than later in the season, as at present the seedsmen have a better stock, and are more at leisure to attend to your orders than they will be by and by; look over all seed saved to see that they are in order, and try them by sprouting in wet moss or damp soil in a warm room.

Tools.

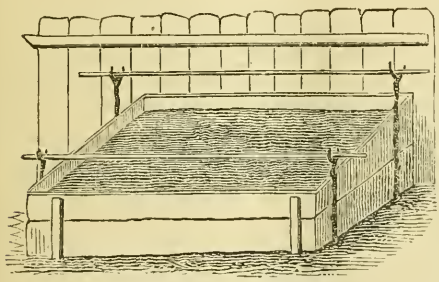
Generally farmers provide but few if any tools expressly for garden use, yet there are a few very durable ones for this purpose; these, if to be purchased, should be procured at the earliest opportunity; if hoes, shovels, forks, &c., let them be of the best quality of steel, and light; they may cost a little more at first than those of poorer quality, but in useing them you will never begrudge their cost, as what was expended in money is more than saved in muscle. If old ones need repairing see, that it is done, and all in order ready for use. Have a tool-

room, and a place for every tool. and when not in use see that it is in place, and be particular after using to clean it dry before putting up. Try this and see the amount of time and vexation it will save you in one short season. Little else than a few similar preparations to the above can be done in either the vegetable, fruit or flower garden, or lawn, so long as the ground remains covered with snow, unless it be to see that the trees, &c., are not overloaded with ice or snow.

I omitted above to say glazed sash for hot-beds and cold frames should be made ready now, by obtaining new or repairing old ones. Have them well glazed and painted ready for use. WM. H. WHITE.

South Windsor, Conn., Jan 16, 1867.

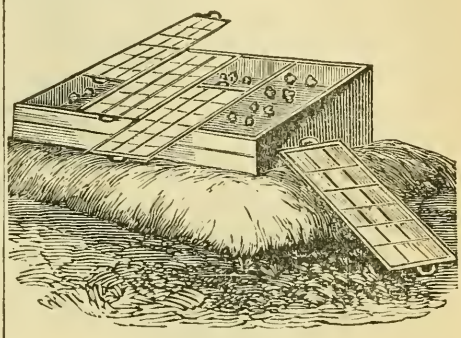
The following cuts will serve to illustrate our correspondent's directions, and may be of service to those who wish to forward a few plants a week or two earlier than can be done in open cultivation. Great experience and care are necessary to the successful management of large and early-started hot-beds. But if not started until after severe cold weather has passed, some time may be gained with much less trouble.



A Cheap Hot-bed without Glass.

This bed may be "made up" in less than half a day by any active, handy boy. Old boards or plank, with a few stakes, are all the material needed for the frame-work. It should have a south-eastern or southern exposure, and be protected from cold winds by a board fence or building. It should be some 18 inches deep in front and two feet at back. Fill to within six inches of the top with fresh unfermented horse manure, then to the top with good loam. Over the cross poles an old blanket, or something of the sort is to be thrown every night when there is danger of frost. The cloth must be removed in the morning. It may be well in severe weather to cover with some old boards. Seeds may be planted in pots made of birch bark, pasteboard, or other material, or even between sods, placed in this primitive hot-bed, or the seeds may be sown directly upon its surface. In this way two or three weeks may be gained for plants which require a long season.

But if you wish to experiment a little with a real "glass house," the following cut will give an idea of the construction of perhaps the most simple form.



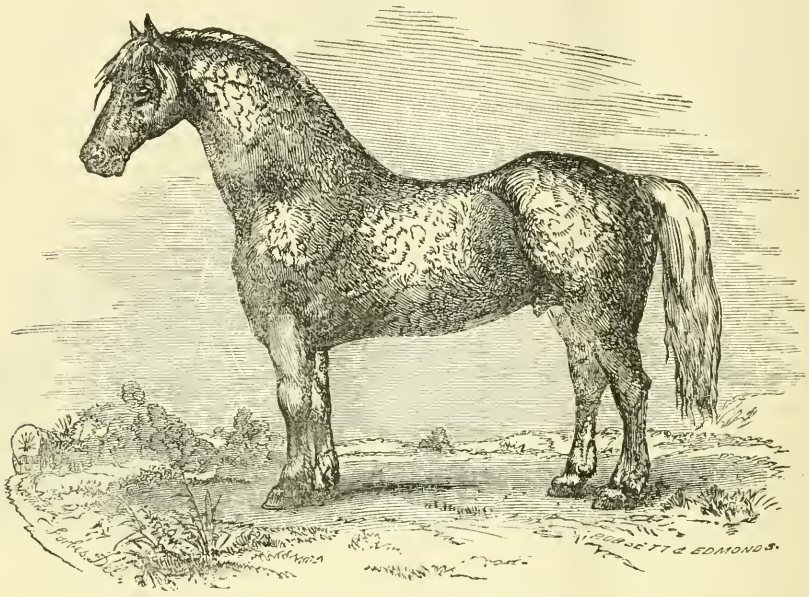
Simple Glass Hot-bed.

To save all digging, it is placed directly on a bed of manure, lying upon the ground. Inside of the frame the manure must be of sufficient thickness to generate the necessary heat, over which, of course, there must be placed soil as directed above.

AMERICA IN MINIATURE.

A great national park is to be established in Washington. A correspondent says it is proposed to make the park a "working model" of the United States—"to delineate, if not to reproduce in miniature, the topography of the continent—to set Huron and Ontario in reduced scale upon a living map some two miles long, not in water colors, but in the element itself—to lead a toy Mississippi, from its baby nursery in the Rocky Mountains, of real rock, through a little continent to a small Gulf of Mexico. The St. Lawrence and the Colorado, and all other great rivers are to be represented by mimic streams; and without intending any allusion to the exclusion of the States lately in rebellion, all the States and Territories are to be represented, preserving their relative position and proportion. It is proposed that museums shall be erected upon each of these little representative tracts, and that the States and citizens shall be invited to contribute to their cabinets specimens of the natural and artificial productions of the States represented."

This is a grand scheme, and will require considerable ingenuity and labor to carry it out. It would be altogether unique and a great addition to the attractions of the capital.



THE CLYDESDALE HORSE.

The river Clyde, on which the city of Glasgow, in Scotland, is situated, has the honor of floating the first steamboat ever built in England, and of christening one of the best breeds of draft horses in the world. The Clydesdale horse owes its origin to a cross of a stallion from Flanders with the best mares of the parish of Lanark, one of the many beautiful towns situated on the river Clyde. Mr. Youatt says that the Clydesdale, although inferior in weight and physical strength to the black horse, is larger than the Suffolk, and has a better head, a longer neck, a lighter carcass, and deeper legs; he is strong, hardy, pulling true, and rarely restive. On the road these horses perform tasks that can scarcely be surpassed, and in the fields they are found steady, docile and safe. Mr. Low says that the Clydesdale horse as now bred is usually sixteen hands high. The prevailing color is black, but the brown or bay is common, and is continually gaining upon the other, and the gray is not unfrequently produced. When in England, Mr. Sanford Howard, now of the Michigan Agricultural College, saw many of this race in the principal breeding districts, and at fairs, &c. He says their weight ranges from 1700 to upwards of 2000 lbs. "Many of them are very symmetrical—are higher in the withers, and particularly more oblique in the shoulders than the English, and walk with ease and rapidity, equalling in this gait any horses I have ever seen. They have good constitutions and are cheaply kept. They are seldom driven out of a walk. The Scottish farmers generally keep lighter kinds of horses for the road. In some of our cities the supply of draft horses has been, of late, obtained in part from Canada West, where a cross of the Clydesdale prevails to some extent."

The above cut is a tolerable representation of this breed of draft horses. And we introduce it for the purpose of suggesting to the breeders of horses the expediency of giving more attention to the rearing of heavier and stronger horses than those which have so generally been exhibited on the grounds of our agricultural fairs.

☞ The Vermonter who was imprisoned in Ohio, on a charge of blackening sheep and selling them as merinoes, has turned the tables. His sheep were genuine, and the prosecutor is now in jail for false imprisonment.

From the Round Table,

SNOW BIRDS.

BY W. L. SHOEMAKER.

I.

The tanager and oriole
Are birds of finest feather,
And their sweet songs delight the soul
In sunshine summer weather;
But they have flown away with hosts
Of other swift or slow birds,
And hither now from polar coasts
Fly flocks of merry snow-birds.

II.

The blackbird and the bobolink,
The pewee and the swallow,
From Winter's withering breath, too, shrink,
And Summer's footsteps follow.
In the crisp meads, and bleak, bare trees,
I find but few or no birds,
Save those that love the chilly breeze,
The lightsome little snow-birds.

III.

The brooding wren, her wooden house
Has long ago left lonely;
In many a home on wild-wood boughs
There nestle dry leaves only;
But Winter, who drives birds away,
Would on us fain bestow birds,
To soothe the rigor of his sway.
So sends the twittering snow-birds.

IV.

The robin's with us yet, I know,
The chickadee and blue bird,
And so, too, is the sable crow,
Through every change a true bird;
But winter is no friend of theirs,
No good these rude airs blow birds,
They seem to think; and not one shares
The joyance of the snow-birds.

V.

When all the air is dark and drear,
And clouds o'er Heaven are flying,
And wailing winds we shivering hear,
The tempest prophesying;
Like jolly sprites, in garments grey,
Lo! sudden come and go birds;
We look around, and sigh, and say,
"'Twill snow, for there are snow-birds!'

VI.

'Tis true, they oft are harbingers
Of rough and stormy weather;
But joy, not grief, my spirit stirs,
To see them sport together.
Methinks they're for our solace sent,
And counsel, too, although birds,
For who on dark days teach content
So well as do the snow-birds?

VII.

The snow, by many signs foretold,
Now fast, at last, is falling;
The lone, lost winds, grown bitter cold,
With muffled voice are calling.
O! how will now those revellers fare?
No ruth the frost-imps show birds,
Vain fear! they for no shelter care,
The tiny stoic snow-birds.

VIII.

For they were cradled in the storm;
Their males were icy breezes;
Their good grey coats will keep them warm,
Whatever round them freezes.
Ah! let us pray that One above,
As we are not below birds,
Will guard us with His heavenly love,
Ev'n as He guards the snow-birds!

For the New England Farmer.

CULTURE OF POTATOES.

Read by Mr. James P. Brown, before the Concord Farmers' Club, Nov. 22, 1866, in reply to the question, What kinds of potatoes shall we raise for family use, or for market?

I suppose that one farmer would name one kind, and another some other. For fall or early winter, the *Jackson Whites* are best; for late or spring use, I prefer the *Garnet* or *Davis' Seedling*. For market, the Jacksons are decidedly the best, as they sell better than most other kinds. Besides this, I can raise about one-quarter more Jacksons' on the same ground, than of any other sort. The difference in cultivation, I should think, is in favor of the Jacksons, as they can be planted a little nearer together than other kinds.

To raise a good crop, there are three or four things to be considered. First, we must have good land and a plenty of barnyard manure, with good seed and good cultivation. I prefer to take land that brought rye the preceding season, plough in the stubble in the fall, at least eight inches deep; then in early spring cart on twenty-five ox-loads to the acre of coarse manure from under the barn, spread as even as possible, and plough in about five or six inches deep, with a small plough. Harrow it down smooth, then furrow with a small horse plough about three feet each way. For seed, I prefer to go to Boston and buy the best seed I can find of the late Jackson sort, cut them fine—not having more than two eyes to the piece—and put two pieces in the hill; apply a little plaster, cover them lightly with a hoe, and as soon as they begin to break ground run the cultivator through both ways, and it will not be much work to hoe them. In about ten days go through the same operation again. If the land is pretty clear from weeds, three times hoeing will answer; if not, go over it the fourth time. I planted about two and one-half acres in this way, and raised 550 bushels of good, sound potatoes this last season, which I think was a very good crop. If I desired to plant grass land, I should plough in the fall, and proceed as before stated.

For the New England Farmer.

WOOL TARIFF.

Of what avail is it, fellow farmers, that we embrace by actual count three-fourths of the voters, and more than that proportion of the taxable property of the country, if we are disregarded in the Senate, and degraded in our own markets to competition with the outlaws of Britain in the Old World, and the half savage tribes of the New? What is the policy—what the justness of such a state of things? What did England do for us, in our life struggle, that the product of her convict labor in Australia should take the place of that of our tried and true citizens in their own market? We surely wish all the South American States

well, but what peculiar claim have they upon our charity, that they find in our ports what is to them a prime market for a vast amount of wool, to the ruinous depression of our own heavily taxed product?

For what are Governments formed if not to protect the people from external as well as internal encroachments upon their welfare. Even the private citizen, who neglects to provide for his own house, is by the highest authority pronounced "worse than an infidel." Our national existence we consider of the greatest worth. It cost us dearly to preserve it. The price is not yet paid. Twenty-five years of extra taxation is the shortest time yet mentioned in which it can be canceled. Should not, then, every art, every industry, every production that is, or may be American, be fostered? What did Napoleon I. in his gigantic wars? English products were by the Berlin decree excluded. Every product and improvement was stimulated; every art encouraged, so hat after the lapse of a quarter of a century of frightful war, France could show a better financial condition than at the beginning.

We are not now asking the exclusion of foreign goods, but we do ask a just protection. We ask that our patriotism and our citizenship be not dishonored by placing us in competition with the half savage, convict and pauper portions of the world. Henry C. Fitch.

North Thetford, Vt., Jan. 7th, 1867.

TRAINING COLTS.

Let the education commence with the birth. The colt should be fed with a little oats in a pan; it will soon learn to feed from your hand. It should then be fondled and petted, at the same time the hand should frequently be passed over the body and occasionally carried down the limbs. The tiny feet should at length be raised, and afterwards the hoof be gently tapped. These things should be repeated till they are submitted to without any evidence of fear being excited by the liberties taken.

When weaning has by the process of nature been accomplished, the colt should not be turned out and neglected until it is old enough to work; it should still be sheltered and nourished, the previous lessons being enforced with greater emphasis as the age progresses. When kept in the stable it should be accustomed to the harness, wearing it a few hours in the stall. He should next be taken out and led gently about to get accustomed to the rattling of the chains. No attempt should be made to put the colt to work before he is three and a half or four years old.

If the colt has been treated as previously directed, there will be little difficulty in breaking him to harness work. Put him by the side of an old and steady horse, and a light wagon without a load, and handle him gently, until he is made to understand what is required of him. When about to put him in single harness he should be brought out and have the wagon shown him, being allowed to smell it and examine until he has become familiar with every part of it. Every part of the wagon and harness should be strong and well made, so that there can be no possibility of breaking. When he is put in the vehicle, every strap should be buckled securely and none left to strike against him. He should then be made to advance, and the wagon gently pushed from behind, that he may not feel its weight for a short distance. The horse should on no account be allowed to trot until he is perfectly familiar with the sound of the wheels. After being driven several times he may be trotted gently, but should not be put to his speed nor kept in harness until he is tired out.

Most harness horses are too imperfectly broken. Their education is too hurried, and seems to be considered perfect as soon as the animal will merely take to the collar. Many young horses are soon ruined by the unfeeling employment of the bearing rein, which disables the organs of respiration and renders the lightest draft a burden. When starting to drive a young horse, the driver should mount his seat quietly, gather up his reins, and get his horse under way quietly by speaking or chirrupping; never starting with a jerk or striking with a whip—allowing him to increase his pace by degrees to the speed required, instead of forcing it on a sudden. Keep at a regular gait; do not go by fits and starts.—*Am. Stock Jour.*

LABOR.

Many sermons have been written on the "dignity" of labor, and much pains has been taken to persuade young men that it is "dignified" to roll up their sleeves, and toil and sweat in the dirt. Has any one been persuaded that this is "true preaching," and, if so, has he been prompted by it to go to work? No. No man ever worked because of the dignity of labor, and the argument may as well be dropped.

Most men work from necessity, or what seems to them so,—all should work because it is their *duty*. This is the word—DUTY. It is due to himself, his friends, his country, and, above all, to Him who gave the faculties and the power to work, that every young man should take hold at once of that which lies before him, and do it with his might.

We like, therefore, the preaching of Gov. Wm. Smyth, of Virginia, who, in his speech at the Farmer's Convention at Richmond, is reported as follows: "When he got home after the war, he found citizens of the village standing at the corners of the streets, the young men idle—but he reminded them of their duty. He told them if they could not earn a dollar a day then they ought to take less, and they would have the consolation of knowing they had done their duty. That was the principle." This is indeed the "princi-

ple,"—the very beginning of all right doing, that a thing be done because it ought to be done.—*American Farmer, Maryland.*

A WINTER MORNING.

BY ANDREWS NORTON.

The keen, clear air—the splendid sight—
We waken to a world of ice,
Where all things are enshrined in light,
As by some genii's quaint device.

A shower of gems is strewed around,
The flowers of winter rich and rare,
Rubies and sapphires deck the ground,
The topaz, emerald, all are there.

The morning sun with cloudless rays,
His powerless splendor round us streams;
From crusted boughs, and twinkling sprays,
Fly back unloosed the rainbow beams.

With more than summer beauty fair,
The trees in winter's garb are shown;
What a rich halo melts in air,
Around their crystal branches thrown!

O God of Nature! with what might
Of beauty, showered on all below,
Thy guiding power would lead aright
Earth's wanderer all thy love to know!

MASSACHUSETTS BOARD OF AGRICULTURE.

The State Board of Agriculture met at the office of the Secretary, at the State House, on Thursday, Jan. 31st. Present, Messrs. Billings, Bull, Chadbourne, Clement, Davis, Hosmer, Hubbard, Huntington, S. Johnson, J. Johnson, Jr., King, Moore, Perkins, Saltonstall, Sanderson, Slade, Smith, Stedman, Stockbridge, Taft, Thompson, Ward and Watkins. Mr. Davis in the chair.

Thursday's session was chiefly occupied by the delegates appointed to attend and report upon the exhibitions of the several county societies.

As we have not space this week for any extended report of the proceedings during the sessions of Thursday, Friday, and Saturday of last week, and of Monday and Tuesday of the present week, we can only say that the business has been transacted promptly, and that the reports and discussions were most interesting,—too interesting and valuable, it strikes us, to be confined to a narrow room in the basement of the capitol. True, they will be printed and read, but why should not the living voice as well as the printed report reach the people who are interested in the subjects upon which the Board have been in deliberation these five days past?

Among the subjects which we were fortunate enough to hear reported upon and discussed, were an essay by Pres. Chadbourne on the Culture of Chicory; by Mr. Smith, on the management of Agricultural Societies; by Mr. Stockbridge, on Plants as an Indication of the nature of the Soil; by Mr. Moore, on the Adaptation of Crops to Soils; by Mr. Clement, on Transplanting Fruit and Forest Trees; by Mr. King, on the Cultivation of Cranberries; by Mr. Hubbard on Dairying; by Mr. Clement, on the Agriculture of Middlesex county; by Mr. Perkins on Agricultural Education; by Mr Hubbard on the Agriculture of Worcester South, &c.

Pres. Chadbourne made a statement in relation to the State Agricultural College. His suggestion that each of the twenty-five agricultural societies, represented in this Board, should, by subscription or otherwise, procure a scholarship to be awarded by them, under such regulations as they saw fit to prescribe, to some meritorious young man who would engage to remain in the county after his education was completed, appeared to be well received by the members of the Board, as were also his other statements and suggestions in relation to the institution of which he is now the head.

Among the many items of business which were passed upon, the following seem to deserve an early publication:

Voted, That the Secretary of this Board be requested to notify all of the Societies receiving the bounty of the State, that hereafter in addition to the financial returns now required by law to be made on or before the 10th day of December, they will be required to return a full and complete report of their doings, printed in pamphlet form on or before the 15th day of January following, and that the Secretary will not be authorized to certify to the legislature, or to the State auditors that a society has complied with the law and is entitled to its bounty unless it has conformed to this requirement.

Voted, That the several Agricultural Societies receiving the bounty of the State, be hereafter required to offer annually three premiums of not less than eight, six, and four dollars, respectively, for the best reports of Committees who recommended premiums.

☞ The Rhode Island statute prohibits the offering of quails or partridges for sale in the markets after the 1st of January, and a Providence man was lately fined $2 and costs apiece for every bird of a lot which he tried to sell in violation of the law. The quails were killed in Ohio, and brought to Providence for sale, but the law did not recognize the distinction.

☞ There are but seven scholars in the Vermont Agricultural College.

Ladies' Department.

DOMESTIC ECONOMY;

OR

HOW TO MAKE HOME PLEASANT.

BY ANNE G. HALE.

[Entered according to Act of Congress, in the year 1866, by R. P. Eaton & Co., in the Clerk's Office of the District Court for the District of Massachusetts.]

CHAPTER II.

HOUSE PLANTS—THEIR CARE AND CULTURE.

Plants that are cultivated within doors are generally exotics, and, being for the most part natives of warmer climates than ours, they require shelter through the winter. While we supply that necessity, there arises a desire to receive from them, in return, the beauty and fragrance which they yield naturally only during the summer;—for, although we hear of countries where "The roses are blooming all the year round," this is not absolutely the fact —they must have seasons of rest, or they soon die of exhaustion.

The time of their blossoming may be changed, however. Indeed, in the case of tropical plants that have been adopted by us it has been changed, or our winters would not be gladdened by their cheerful presence. Luxuriant green foliage is always pleasant to the eye,—more particularly when all else looks barren and dreary. But we do not feel satisfied with that alone. We want mingled with that verdure the bright colors and the sweet fragrance of beautiful blossoms. A knowledge of the habits of each individual plant which we take under our care, and of its susceptibility to the influence of certain substances which we furnish it for food, and a clear understanding of the principles of floral art, together with a strict attention to the hints which Nature is continually giving us, will bring about the desired result—buds and blossoms waiting or coming at our will.

Our grandmothers can tell us that before the use of stoves and furnaces (*steam*, even,) for the heating of our houses, nobody,—except those few, who, making the propagation of plants a business, built winter houses for them, —thought of keeping plants alive, much less, in bloom, out of the cellar. If one was fortunate enough to own a monthly rosebush, or an orange tree, or a Jerusalem cherry; a prickly pear, a sweet-scented geranium, or a hydrangea (that wonder to my young eyes,—with its huge balls of flowers changing so mysteriously from white to pink, to blue, and back again to white,)— it was wrapped in mats, as soon as frosty nights came, and banished to the "arch," the "donjon-keep" of childhood's imagination, there to pass the time in inglorious idleness till the spring breezes wakened the young buds of the trees. Then they were released from their prison, and, restored once more to the sunshine and free air, they quickly regained their wonted vigor and loveliness.

This ancient necessity is now-a-days sometimes held as a threat over plants that do not flourish and blossom just when and as we wish, in the same way that injudicious mothers talk of the dark closet to rebellious and refractory children; and it must be confessed that, oftentimes, as with those unreasonable mothers, the threat is actually executed, through pretence of benefiting the unfortunate objects of our neglect, when in reality it is to rid ourselves of the presence of a standing disgrace. Faithful and loving care in either case,—gentle pruning of wrong tendencies, warm encouragement of feeble efforts that are put forth in the right direction, and a patient watchfulness against all hurtful influences will ensure to both mortal and immortal plants that true symmetry of growth, that strong and rich flourishing, which will conduce to the perfection of the good fruit for which they were designed by an all-wise and benevolent Creator.

If house-plants are, usually, exotics, there is no good reason why we should not also take to our hearts and homes the lovely things that make beautiful the solitary paths of the forest; that enamel the meadows, and embroider the margins of our summer streams and lakelets. So, when the spring opens, with the first coming of May, it will be well to give ourselves a holiday from household cares, and go with the children in search of floral gems. We shall want a trowel, and a basket, and one of the boys had better bring a spade. We must be provided, too, with thick gloves; and a stout knife may not come amiss. Of course, overshoes and winter clothing will be worn, for the fields are yet damp, and we shall be obliged to cross marshes. We must get at least two spec-

imens of the dark-leaved Sanguinaria, called by the country people Blood-root, for its delicate flower so nearly resembles the orange blossom that it can very well take its place at any wedding of our friends next winter. We will take also a plenty of the damp, boggy earth where it dwells, so that it shall not miss its usual nutriment; and, gently loosening its root, by the aid of the trowel, from the tangled vines around it, place it with this soil in the basket.

Next we will select a group of Hepaticas, or Liver-wort; and cutting the turf carefully with the knife, lest the roots should be detached from the fibrous peat where it first opened its eyes, lift the whole clump with the spade, and place it with the Sanguinaria. These are all the roots wanted to-day. We shall gather from among the last year's dead leaves handfuls of the sweet Arbutus, or Mayflower, for vases at the home; and set the children hunting for the tiny buds of the Houstonia, or, as we love to call it, Innocence; and look ourselves after the shy violets; by and bye, when the sunshine has lured them from their beds, and the velvet casket of the young spring grass is lit up with their sapphires and pearls, we will come and take our choice for a new setting with our family jewels. But we must not spend the whole day in the woods,—the roots we have taken ought to be potted immediately.

It will be well to set the two Sanguinarias in separate pots; in the autumn they can be put together, if both live. Pots three inches in diameter at the top will be the proper size—No. 9. Let the children gather a handful of pebbles about the size of a plum-stone. Put eight or ten of these in the bottom of each pot, then a little of the bog earth, to which you have added—sprinkling it in with the hand—loam, from an old bed in the garden; then more of the bog earth. Now, set the root of the plant exactly in the centre, hold it gently in place with the left hand, with the right add more of the soil and loam, till the pot is nearly full. Press it lightly around the collar of the plant—just enough to keep it steady, not hard, nor closely. Strike the side of the pot two or three times, to settle the earth firmly. Add a little more soil, and strike in the same manner, till the earth lies evenly around the plant. Fill the pot nearly to the rim. Water with warm water. If, after watering, the soil is loosened around the plant, add a little more. Pinch off the flower buds. Keep the plant in a shady place till August—watering it every day, freely. Then bring it gradually to bear the sunshine,—but it never needs much; you can keep it in the winter on a bracket at the side of the window, and it will spread out its large leaves and lift up its pure blossoms as gaily as in its native marsh.

The clump of Hepaticas must have a pot of the next larger size. Place the pebbles as for the other plants, cover them with rich loam, and then set upon it the turf in which the hepaticas are still firmly fixed—it will do better if the roots are not disturbed. Fill in around the crevices more of the loam. Shake the pot to settle it well, and water as you did the Sanguinarias. Cut off the blossoms, and all the buds as fast as they appear—because you wish for bloom in the winter. Set the pot in the shade. In order that no worms shall get into pots that are kept out of doors in the summer, a space should be set apart for them, and the coal clinkers and fine cinders left from the winter's fires should be spread over it, and on these place the pots. Treat this as you do the Sanguinarias, only it will want a front place at the window when cold weather comes, if you desire deep blue flowers.

When the violets are in bloom go again to the woods, and take your choice of the different species, and do for them as for the hepaticas. Then, if you wish to domesticate more wild flowers, get the beautiful blue Harebell, in its season; and then, the elegant Lobelia cardinalis. There are the Ferns, too, so curious, and of such easy culture; and the Mosses,—don't forget them. A very pretty ornament for the table, or the mantel, is a dish of Ferns, or of Mosses. Early in October go to some sequestered spot in the woods and bring away as many kinds as you can. Get them, as you did the hepaticas, still clinging to their native soil. A common deep dish is the best thing to hold them. Fill the dish with leaf-mould,—that is, the rotten leaves and fibrous soil of the woods—so that it is a little higher in the centre; set your Ferns securely in this, and arrange around them bits of the different kinds of moss. Set this dish within another two sizes larger. Fill the outer dish with water. Get a bell-glass to fit the inner dish, like the glass cover used by confectioners and bakers for their show-cake. It will rest, without the in-

ner, in the water contained in the outer dish. Occasionally supply water, it will need it very seldom, however,—by its evaporation it feeds the plants in the form of dew and the first supply will last a long time. Mosses can be grown very nicely without this cover and outer dish, if you water them as other plants are watered and keep them in the shade. In collecting your mosses, try to find other little things to grow among them. A tiny seedling pine, or juniper; a bit of houstonia; an anemone; a root of the partridge berry, will add greatly to the beauty of your mound; especially if you set the littte trees in the centre, and arrange the mosses and flower-roots tastefully.

So much for native plants. Let us now turn our attention to their naturalized brethren, upon whom we mainly depend for winter flowers.

In deciding what varieties we can best attend to, regard must be paid to the space we can allow for their accommodation. They must be kept in the family sitting-room where the air will be of the proper and most equable temperature. You can probably spare one window for their use. The best stand for a few plants is very simple—only a narrow table as long as the window is wide. On this place a shallow wooden tray (what might be called a flat drawer, being only about an inch and a half deep) lined with zinc, or galvanized iron; in this most of your pots should be placed. Five of the smallest size that you have, holding plants of low growth, for the front row; behind them four, possibly, five, taller and larger; and, if the tray be wide enough, get another row of larger plants. The pots ought not to touch, there should be a free passage for air around and between them. Cover the floor of the tray with moss, after you have arranged your pots; this will absorb whatever water is spilled in watering, and, also, give the stand a neat and pretty appearance.

At each side of this, if you have an oleander and abutilon tall enough to reach the sunshine when set upon the floor, lay a small piece of painted canvass, and upon that either zinc or galvanized iron for the accommodation of those two pots. Hanging plants are so graceful you will want them for the upper part of the window,—one for the centre, and, if it be pretty wide, one on each side of that depending a little lower. An ivy will look well placed on a bracket in the corner of the room, if its branches are trained over the wall, and around pictures. A large-flowered geranium, or a rosebush is also an elegant ornament placed in such a situation; and will flourish well if the sunshine reaches it, or if you let it exchange places part of the day with some plant on the stand. For a bay window a longer and wider stand may be used; or three smaller ones, or one with graduated shelves, according to your fancy. Some arrange shelves on small supporters or brackets, near the panes. These have a fine effect for out-of-door admirers, but if you wish to enjoy the beauty of your flowers yourself, and to have your family enjoy that beauty also, the movable stand is preferable, as its position can be quickly and easily changed to suit your vision, and in case of sudden change in the weather the plants will be much safer. If, however, any plant gets frozen, place it in cold water, and keep it away from the sun till the leaves resume their natural appearance.

To ensure early blossoming, potting should be done in June, and the plants be suffered to rest in a shady, cool place, with very little watering, till September. Most of them can then be brought gradually to the full sunshine, and by the middle of October they should be fully established for winter.

The proper kind of pot has been mentioned, but the soil varies with different plants. This is an important point. Each plant should be so studied that no mistake can be made in this respect. For most plants the turf of peat meadows thoroughly dried and broken up, mixed with leaf-mould, or other decayed vegetable matter, is considered the best. To this is added rich loam and sand, according to the native soil of the plant. With this, to deepen the color of the flowers and to increase their beauty, bits of old iron, rusty nails, and charcoal dust are frequently mixed. For draining, upon which the health of the roots depends, small pebbles, broken brick, or crockery, or flower pots, coal clinkers, or cinders must always be placed in the bottom of the pot.

Fertilizers are best applied in a liquid form, and they should be used sparingly. They are good to force the growth of the plant and to hasten the blossoms; if it is wished to delay the time of flowering all fertilizers should be avoided and the sunshine denied. It is a good plan to prepare for winter use a fertiliz-

ing mixture, composed of stable litter and droppings from the hen roost or pigeon house. Equal parts of these three making one quart of the substance is best; to this add a quart of pounded charcoal. Put this mixture in a keg and pour upon it three gallons of water. Stir it every few days for a fortnight, it will then be ready for use.

If the leaves of your plants do not put forth as rapidly as you wish, take half a pint of this liquid and dilute it with clean warm water, and pour it upon the soil near the edge of the pot. There will be sufficient for half-a-dozen pots, unless they are very large. Use it once in three days, three times; then wait ten days, and give the same again. This will probably be sufficient for the winter; if not, after waiting a month, try again going through the same process.

Now, a few words about colors; in arranging your flowers have regard to contrasting tints and the harmony of the whole.

Too great a variety of colers in a group of plants is as detrimental to their beauty as it would be in a person's dress or in the furniture of a room. Scarlet and crimson should never be together; different shades of either look well, but the two do not harmonize. Scarlet has a good effect with white and green; or scarlet and deep blue and deep yellow with plenty of green, distinct all from each other, and the green preponderating. Bluish white and rose color, and dark glossy leaves agree well; bluish white harmonises best with delicate colors,—clear white, with brighter gaudier hues. A variety of white flowers is a great addition to the beauty of a group.

The three primitive colors may be all together—red, blue, and yellow—provided they are all pure; the red only one kind of red, the blue not purple, and the yellow not orange; then with plenty of green and white, the group will look well. But if you put only blue and yellow with the green the eye naturally looks for the complementary color, red, and feels the deficiency. Scarlet, crimson or pink, mixed with green alone, satisfy the eye; and purple, being a mixture of blue and red, contrasts well with yellow—orange, formed of red and yellow, with blue. Pink and pale blue contrast and at the same time harmonize well; these with delicate green and white make a pretty show. Keep these facts in mind when about procuring your plants and you will be saved many regrets; above all, remember how much white flowers will enhance the beauty of all the rest.

It has been estimated that there are over one hundred thousand species of plants now known and the number is constantly increasing as new countries are visited by naturalists. In comparison with that great number, the following list seems small; but it will be found to comprise a good variety of colors and forms, and they are all well adapted to house culture.

Abutilon, Agapanthus, Alyssum, Amaryllis, Arum, Auricula, Azalea, Begonias, Cactus, Camellia, Calceolaria, Carnation, Chrysanthemum, Daisy, Daphne, Eupatorium, Fuchsia, Forget-me-not, Geranium, Heliotrope, Hepatica, Hydrangea, Hyacinth, Ivy, (English, German, Coliseum,) Lantana, Lemon, Lily of the Valley, Lobelia, Mahonia, Mignonette, Mimulus, (Monkey flower,) Myrtle, Oleander, Orrange, Oxalis, Pansy, Petunia, Pink, Primrose, Pyrethrum, Periwinkle, Rose, Sanguinaria, Salvia, Verbena, Violet, Wall flower.

Abutilon.—Greek name for mulberry which the leaves of many species resemble in shape. Native of New Holland and South America, in light sandy soil. Fill pot a quarter full of broken crockery or shreds for good drainage. Soil, two parts loam, one part leaf mould, one part sand; if too rich it will grow too tall for forming handsome side branches. Keep moderately moist, not very hot. It is readily increased by cuttings placed in a gentle heat. First introduced to notice in 1821. *A. Venosa*—so called from its deep red veins—is very beautiful, bearing large yellow bells. *A. Esculentum* is much esteemed in Brazil; at Rio Janeiro the inhabitants dress and eat the flowers with their food.

A. Striatum is nearly always in bloom. Its bells, of a bright golden yellow, hang on slender, graceful stalks that make a fine appearance if well trained to a stake or a frame.

Snow and sleet against the pane
Tell of winter cold and dreary;
But within doors, blithely reign
Bloom, and summer, bright and cheery;
Building up her leafy spire,
Day by day still high and higher,
Of my flowers the fairest one,
Grows my gay abutilon.

Heedless of the frost and cold,
Hanging out her bells of amber

Veined with scarlet, tipped with gold,
As the boughs aspiring clamber,
Like a bright pagoda seeming,
When the sunlight inly beaming
On her bells its rays hath thrown,
Stands my fair abutilon.

Agapanthus, or African lily.—Name signifies *lovely flower*. *A. Umbellatus* frequently sends up a flower stalk three feet high. The flower is of a beautiful blue color. The plant is easily cultivated in large pots; in a soil consisting of two parts loam and two leaf mould. Needs plenty of water. Must be shifted often into larger and larger pots—generally in the autumn before taking to the cellar. It is generally kept for an ornament of the verandah during the summer. Take off offsets till the flower buds are formed; the plant will be very large before blooming, so the roots must have a good deal of room, and be watered liberally. First introduced into Europe, 1692. One variety has white flowers and another variegated foliage.

Alyssum, called sometimes Madwort.—The ancient Greeks thought if taken internally it allayed anger. A native of Switzerland and the South of Europe. It is well adapted to edgings for beds—is injured by much wet—but also must not be kept too dry; is easily raised from seed or cuttings. It needs a soil of good rich loam. A pot of this little plant looks pretty with pots of daisies and pansies during the winter, and is in much request as a funeral flower.

Amaryllis, or Belladonna Lily, takes its name from a nymph celebrated by the old poets. The word means shining, resplendent; which applies well to the elegant orange scarlet flower. It should have rich loamy soil. After it has done blooming give it but little water, that the bulbs may harden; it will then be more likely to produce flowers another season. Many plants ripen seed, which, dropping upon contiguous pots often furnish a number of good bulbs ready for transplanting almost before you are aware of it. A piece of the outer coating of the bulb with a leaf attached will produce another bulb.

Auricula.—This is sometimes called English Primrose. It is a native of Switzerland, Italy and Germany. It is also found in Persia, of great beauty and fragrance. First brought from Switzerland to England in 1596, where it has always been held in high esteem; especially in the manufacturing towns. The weavers and mechanics of Scotland and of Lancashire, Eng., cultivate it very extensively; and it is no uncommon thing for a workingman who earns only eighteen to thirty shillings a week to give two guineas for a new variety. It needs rich soil with good drainage.

Azalea.—The name is derived from a Greek word signifying dry; in allusion either to the places where it is found, for it loves an arid soil or to the brittle nature of its wood. It thrives best in sandy fibrous peat soil. The pot must be well drained with clinkers, and care must be taken not to overwater it. It can be transplanted at any time, even when in bloom, with a ball of earth about the roots. Young cuttings taken off close to the plant will root readily in pots of sand. Keep it out-of-doors in the summer in a shady place. When it is done blooming keep it warm and well-watered, till the growth of the new wood is perfected; after that give less water; but do not let the roots become dry, for it will die if the moisture does not reach them.

A. Indica, bearing yellow flowers, is the most delicate; this comes from India.

A. Rubra is a native of North America, bears crimson flowers.

A. Alba comes from China; has double white blossoms.

Some of the species have narcotic qualities. Of these is *A. Pontica*, which bears yellow flowers. It is a native of Turkey. The juice in the bottom of its flower-cup is poisonous, and is said to communicate this poison to the honey of Pontus. It was asserted by Xenophon that the honey gathered by the bees from these flowers caused the death of many soldiers in the famous retreat of the ten thousand.

The Azalea is often crossed with the Rhododendron and curious hybrids are thus produced.

THE NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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APRIL, 1867.

"When Nature clothes the various scene
With tufts of flowers, and robes of green;
When limpid streams their lustres give,
And health and glad contentment live
With lovely nymphs and happy swains,
In humble cots, on tranquil plains,
I bless her bounties, and I raise
My artless tueme to sounds of praise."

ALL animated beings hail the return of *Spring* with new delight; man, with his voice of thanksgiving; the lambs, the calves, and even the older kine, escaped from the restraints of winter, frisk and gambol in the pure air, and glowing sun. Cocks crow, birds sing, and insects, on glad wings, hum away their little life. To those, even, who have passed well into the vale of years, Spring comes with new inspirations and hopes.

The vegetable, as well as the animal kingdom, is kindled into new life. The earth gradually exchanges its winter robes for a mantle of green; flowers spring up at our feet; trees and shrubs put forth buds which are soon expanded into blossoms and leaves, so that our first feelings are those of wonder and delight at the marvellous change.

This sudden burst of vegetation is produced by the "increased temperature of the earth and atmosphere, assisting the natural tendency of the plants to awake from the lethargic state into which they are thrown during winter. The progress of the earth in its orbit towards its greatest distance from the sun, causes that luminary to ascend higher in the heavens, and to be longer above the horizon, and thus produces longer and warmer days. The more perpendicularly the sun's rays fall upon the surface of the earth, the greater is the heat they excite. Hence, as the sun daily ascends higher above the horizon, and consequently darts his rays upon us in a more perpendicular direction, the temperature of the earth and air gradually increases, and milder and more genial weather ensues. * * The earth opens, as it were, her bosom to the sun; all her veins feel the genial influence; and a vital energy moves and works in all her blossoms, buds and leaves. What was lately barrenness, becomes fertility; from desolation and death start up life and varied beauty, as if beneath the reviving footsteps of a present Deity."

Heat is the great external agent in vegetation. By it the fibrous and cellular substances are gradually expanded, so that the sap ascends from the roots through the innumerable minute tubes and cells in the trunks and

branches, and circulates through the finest veins of the leaves and flowers. This heat increases in intensity by degrees, and if it becomes too great, is occasionally checked by atmospheric changes. When these occur, the buds seem to possess a wonderful power, (the natural law, we suppose, of expansion and contraction,) of shrinking into one-half their former size, with their scales or covers so completely closed around them, as to exclude the external air. Sometimes, however, the cold is so great as to condense the vapor into frost, and tender plants are ruined. When once a plant has put forth its foliage, and its vital action is in play, it will bear a temperature lower than that in which it first started.

There is, also, something well worthy of thought, and extremely interesting, in the *adaptation* of plants to the climate. A very large proportion of the seeds which we sow, are committed to the ground in the spring. In their process of germination two things are indispensable—warmth and moisture; these must be moderate and constant. July suns would excite such a degree of evaporation as to abstract nearly all the moisture from the soil, and a drenching summer shower would be likely to wash seeds from their places or drown them out. But the frequent, "soft-falling showers" of April and May are calculated to afford all the moisture that the germinating seed needs, while the gradually increasing heat keeps the soil just in that state of warmth best calculated to send upward the young and tender germ.

In June, the sun is more vertical, and the heat much greater, but the plants have now laid strong hold of the soil, by sending their roots below, where the warm and moist air penetrates, and where evaporation has but little action. Having now this supply of moisture for the numerous feeders they have sent out, the influence of the sun's rays are beneficial and greatly promote the growth of the plants.

The "analogy, therefore, between the vegetative effects of the daily increasing temperature of this season, and the well-known influence of climate upon the geographical distribution of plants," is very striking. See, from the first dawn of spring, how flower succeeds flower, and tree after tree comes into leaf in regular succession. The reader will observe that this adaptation continues from the frozen region of the polar circle to the equator, giving us all the vegetable forms from the lichens of Lapland to the spice trees of the tropics. In the frozen regions of the north, the reindeer feeds upon the apparently dry and unnutritious mosses that cling to the rocks,—while "within the torrid zone, maize and rice begin to be cultivated. As we approach the equator, the vegetable productions of the earth increase in richness and luxuriance. In the tropical region, we meet with the finest fruits and aromatics, and all the plants that most administer to the luxury of man. There flourish the sugar cane, the coffee tree, the bread tree, the palm, the date, the cocoa, cinnamon, nutmeg, pepper, camphor tree, and numerous other vegetable treasures."

It is from these facts that the farmer may draw the most important inferences, viz: that he must commit his seeds to the soil, when their germination and growth will receive the most influence from the peculiarities of the season to which they are adapted; that unless so committed they will not be in a condition to receive the greatest benefits from the succeeding seasons of growth and ripening; that is, delay in preparation of the soil, and sowing at the right time, will be delay throughout the growing and ripening period.

FARM WORK IN APRIL.

The best way for farmers to conduct their affairs is, so as to *have no regrets*. Carpenters, lawyers, shoemakers, manufacturers, &c., can perform their work at almost any time, and *sometimes* get along very well in a slip-slop way; but the farmer cannot. The Lord of the seasons has confined him to the observance of *natural laws*, and he must regard them, or all will be barren about him. If he will have a harvest, he must have an appropriate *seed-time*, or he shall not reap.

Some farmers have been living upon regrets (and other things) for the last forty years. Every spring regretting that they did not set an orchard twenty years ago, lay out a garden and plant pear trees, set currant bushes, raspberries, establish an asparagus bed, and introduce a few choice flowers, where a wife or daughter—now saints in heaven—urged it many years ago!

"How sorry I am," said farmer A., that I

did not set twenty or thirty pear trees, in the month of May, when George was born. My land is suitable, and had I set them then, we might have a variety and abundance of pears. Now we have none." So hundreds annually say of the garden, of vegetables, fruits and flowers. Delays are dangerous.

Such is frequently the case with regard to stock, horses, oxen, cows and sheep. The farmer finds his old, faithful horse away beyond his "teens," and his cows with failing teeth; and yet there are no colts or calves to supply their places.

Now is the "time to turn over a new leaf," and have something coming on to supply the family with vegetables and fruits, and fill the barn with farm stock.

All the plans for sowing and planting, setting trees, shrubs, plants for small fruits, and for completing arrangements for all the spring work should be completed early in April. When this is done, the farmer has a *definite* object before him; has no doubts about this thing or that, but is able to go directly ahead in all the various duties before him. Why is not this as important to his business as it is important in most other engagements? If he tries the plan he will find that it is.

Go on with plowing as fast as the soil is sufficiently dry to drop to pieces when moved.

Add something to the extent of ditches, as opportunity offers.

Scatter droppings of the cattle on mowing fields.

Get wood under cover before the month closes.

See that all the seeds wanted are on hand, and of good quality.

Overhaul manures and get them ready for use. The finer they are, the more useful they will be the present year.

Attend to the setting of the hens. Let them have three inches in thickness of earth to place their eggs upon. See that vermin do not annoy them.

These are a few things which *April* demands should be done in April. Do them seasonably and well, and they will make liberal returns.

—The New Orleans papers announce the arrival there of one of Fowler's English Steam Plows. Its trial on the fair grounds, near the city, was witnessed by a large company of planters and others.

For the New England Farmer.

"GRAPE FEVER."---No. II.

Partial failures have led some persons to speak of the excitement alluded to in my last, as "grape fever;" and some others have used the same words intending thereby to warn and discourage persons who have shown an interest in the discussion of the subject, and who have seriously made up their minds to cultivate grapes. In my last I intended in a somewhat humorous way to suggest some of the causes of failure, and I did seriously mean the whole to be a warning to those who are liable to be humbugged by unscrupulous dealers in vines. If any reader of those remarks should think me too severe, or in the following too self-confident, I can only say that if they will call upon me at my home, I will give them all the evidence usually expected in such cases, that such has been the experience of myself and of some of my neighbors.

I now return to the question, "Will it pay to grow grapes in New England?"

The varieties called Anna, To-Kalon and Catawba I have never seen ripe in the open air in Massachusetts. I have seen Catawba colored, but not ripe in the sense that makes it fit for eating. Diana, Isabella and most of the seedlings from these, and from Catawba, are too uncertain in ripening their fruit to be fit for general cultivation. All these varieties are excellent when fully ripe, but they can be seen in that condition, in this State, only in sheltered places and favorable seasons. There are other varieties which can be cultivated for the market, that will average, in a series of years, double the amount of profit.

Roger's Hybrids, Nos. 3, 4, 15, 19 and 33, are all strong and healthy growers, their fruit is beautiful to look upon, and very good as table grapes. It is said by some that they will not bear our winters in this State unless they are carefully covered. I have not proved them, except in one instance. I purposely left seven each of Nos. 15 and 19 quite exposed to all winds but the west, without any covering or shelter during the winter of 1865 and 1866, and they all lived and did as well the following season as any plants in my collection. I have some exposed this winter. I do not think it best to say more about these, as I have not cultivated them under all those conditions I think they should be, to prove them reliable as a market grape.

Allen's Hybrid and Sweet Water, are both good white grapes, the former the best in vine and fruit, and the very best white grape we have at present, in this State. It is, however, about certain to winter-kill if left uncovered.

Adirondac, Creveling, Iona, Israella, and Rebecca, in soil and location to suit them, are all good grapes. Iona, the best of grapes in the open air in this country, where they can be fully ripened. I have seen it in that condition in this State but once—I fear I never

shall again, except in unusually dry seasons. Of Israella and Rebecca I must say the same I have of Iona, except that they are not so strong in vine. Here, Creveling is a strong grower, the fruit sweet, and is ripe early in the season. Adirondac is a vigorous, handsome and promising variety—the fruit of which, though not considered as good as Iona and Delaware, is very sweet and melting. It is a new variety, and, although it originated in about 44° North latitude, some speak of it as not being very hardy. I have had it above ground but once during the winter, when all the wood died down to the ground; the wood that was covered lived and grew well.

With the experience we have had up to the close of last season, it would seem to be unwise to plant a vineyard of either of the forementioned varieties, if the cultivator's object is *profit* realized in growing them for market. No doubt all these varieties are cultivated with much satisfaction by persons of taste and experience, and in many cases the fruit is worth double the cost of raising it; yet, with each variety, as with the Delaware, there is some one defect, or some one condition of soil, or location, or season, or some habit of the vine which is sufficient to disqualify it for general culture in our climate, especially if the owner has not had long and careful experience in their culture.

There are two varieties of grapes that require no more experience to grow them successfully and profitably in our State than is required to gain the same object in growing the most easily raised vegetable, as both varieties are natives of New England, will do well on the poorest soils, will not winter-kill, and require no more experience in training the vines, &c., than can be gained by any intelligent man by observing for one season the following rules:—

Get plants from wood grown north, of no other variety than Hartford Prolific or Concord—the last is the best grape, and will bring the greatest price in the market. Plant only those vines that are strong in growth, hard in wood and having plump-looking buds. The soil should be high, and free from stagnant water. In such case, most soils are suited to those varieties; but those having lime or granite in them produce the best grapes. Plant the vines, for trellis, one to every six feet; the rows from six to eight feet apart; six is sufficient for the vines, eight gives more room to cultivate, and where land is plenty, is the best distance. For poles, plant the vines four feet apart, and the rows should be six feet. Start the vines with good rotten manure or compost, or wood ashes, and afterward regulate their growth by the use of these; use wood ashes if you can obtain them. Never stimulate the growth to more than eight inches between the buds, or the wood will be spongy, and the crop of fruit the less for it on any given space.

In November, cut back all wood but that which is needed for forming the twist around the post or the arms on the trellis, until the vine is three years old; after that cut back each year's growth to one inch above the second bud.

The first year of bearing, allow but from two to six bunches to remain; weigh these and make a note of the same, so that next year you may be able to guess at the weight by seeing the bunches, and then allow from six to ten pounds to the vine, and so on, according to age and strength, until your posts or trellises will bear no more wood for want of space. In this way you will avoid losing your vines from the chief cause of the destruction of healthy vineyards; namely, overbearing.

Now, if any man will plant Hartford Prolific and Concord grape vines, and cultivate them by the rules I have given, he will make more money, if they bring six cents per pound, instead of sixteen, as they now sell for, than he can make by any farm crop he can raise on the same land.

If any person can prove the contrary of what I have stated, as a favor to myself, and in justice to many who think as I do, will they be so kind as to do so?

If what I have stated cannot be disproved, then to grow grapes is very *profitable*, and whoever is affected by such a "grape fever" will have no cause to regret it.

John Fleming.

Sherborn, Mass., Feb. 23, 1867.

Beet Sugar—The *New York Tribune* gives an encouraging statement of the success of the Beet Sugar Company, at Chatsworth, Illinois. They planted 400 acres, mostly fresh prairie, and raised a crop of 4,000 tuns of fine beets, at a cost of $4 a tun in the pits. The delays consequent on starting the machinery of a new factory has afforded time to test the keeping qualities of the beet, and it appears that only one per cent. was lost by four months delay. The works are now in operation, and upon a trial of various parts of the crop the average yield of fair refining sugar is 7 1-2 per cent., and of refined, equal to New York "B," 5 1-2 per cent. When all the beets are worked up, the yield must reach nearly 400,000 pounds of refined sugar. It is claimed that this experiment shows that beets can be grown on the raw but rich soil of the West as well as on the highly fertilized soils of Belgium and France; that the yield of sugar is almost precisely the same, and that the beets can be kept till they can be used.

—According to Mr. Lawes' estimate the manure from a ton of wheat straw is worth $2.68, while that from a ton of clover is worth $9.64.

COLUMBIAN GAGE PLUM.

This fruit was originated by Mr. L. U. Lawrence, of Hudson, N. Y., from seed of the Green Gage. It ranks as the best of the large, dark colored varieties of the plum. Downing, who is the best authority in regard to fruit originated in New York, says of it:—"The tree is remarkable for its very strong, blunt shoots, large, roundish leaves, and the spreading, horizontal form of its head. It is also highly productive. Branches and upper sides of the leaves downy. Fruit of the largest size, six or seven inches in circumference, nearly globular, one-half rather larger than the other. Skin brownish purple, dotted with numerous fawn-colored specks, and covered with much blue bloom, through which appears a reddish brown tint, on the shaded side. Stalk about an inch long, rather stout, inserted in a rather small cavity. Flesh orange, not very juicy, but when at full maturity, very rich, sugary and excellent. The flesh separates freely from the stone, which is small and compressed." Ripens in New England early in September.

Our engraving is an accurate copy of a specimen of the plum, gathered by us from a tree in the garden of Mr. Henry Vandine, at Cambridgeport.

For the New England Farmer.

WHEAT CULTURE.

The high price of flour and its excellence as an article of food, bread being the staff of life, should stimulate every farmer to its cultivation. In some portions of New England, there is considerable prejudice in regard to the cultivation of wheat. Many, having tried once or perhaps twice and having failed, declare that it cannot be raised, or at least, successfully. I, however, believe that wheat can be profitably cultivated by most farmers in New England, although it needs some experience in order to raise a good crop of wheat as well as any other crop. In saying this I do not wish to be understood that wheat can be grown on every kind of soil, for it cannot. Still I do believe that most of us can and ought to produce our own flour. Wheat ought to be raised, not only for its excellence as an article of food, but when successfully cultivated, it is a very profitable crop, more so than any other grain crop. Moreover, it exhausts the land less than

either oats or barley, and grass seed sown with it is much more apt to germinate and grow than with either of the above named grains.

Having had considerable experience and good success in raising wheat and other crops, perhaps it may not be amiss to relate some of it, for the benefit of my brother farmers; not that I feel myself master, but just a beginner. Agriculture is the greatest of all sciences, and as all sciences are developed from small beginnings, why may I not add my mite? The seasons, of course, have a great deal to do in the raising of all crops, but still, in order to raise good crops, man has a certain duty to perform, and if we expect to succeed and thrive, it behooves us to find out what that duty is. I seldom fail to raise a good crop of wheat, as I hardly ever realize less than twenty, and have raised as many as thirty-five bushels to the acre. Last year I raised on two and a half acres, and from four and a half bushels sowing, seventy-five and a half bushels by weight. I generally sow after a potato crop, and my mode of procedure is as follows: When I first break up a piece of land I almost invariably plant corn, manuring only in the hill, applying ashes, &c. The second year I manure heavily by spreading on, and plant with potatoes, putting no manure in the hill, but using some plaster, and I have had but two poor crops in eleven years, and some seasons have raised as many as four hundred bushels to the acre. My land has now been planted two years and has produced two good crops. By ploughing, and by hoeing and digging the potatoes, the manure that was spread has been thoroughly pulverized and mixed with mother earth, instead of being left in coarse lumps to dry and evaporate as in the old practice. My land has been enriched and equalized and is in good condition, not only to produce straw, but also that precious berry that we have been laboring for.

If you have manured heavily, plough deep and sow early, and don't be afraid to get the grain in too deep. Keep off your old-fashioned iron-tooth harrow, for it does not work the grain in far enough, and the more you harrow your land with it the harder it becomes. Get a good cultivator harrow—they work like a charm—leave the ground light, and get the grain in as it should be. I sow spring wheat of the French T variety. Yours truly,

Isaac W. Hutchins.

Templeton, Mass., Feb. 22, 1867.

Remarks.—We are proud in being the "organ" of the practical experience of such farmers as Mr. Hutchins.

For the New England Farmer.

THE CULTIVATION OF HOPS.

Mr. Editor:—The present comparatively high price of hops is awakening an interest in their cultivation. They were formerly cultivated quite extensively in Eastern Massachusetts. The reasons which led our farmers to cease to cultivate them, were chiefly the three following: 1st, the fluctuating price. This ranged from 8 to 10 cents to 40 or 50 cents. When the price was high, they would set new yards. When it fell below 13 or 14 cents, they would plow them up. Fifty years ago it was thought that 12½ cents would pay for their cultivation. Then poles were worth $7 per hundred, and labor 75 cents per day. The second reason was the scarcity and high price of poles. They gradually rose to ten, twelve and even fifteen dollars per hundred. This decided many to quit the business. The third reason was that they required much manure, and returned nothing to the soil. If they cultivated a large field of hops they had nothing with which to raise corn and grass, and in a few years they were able to keep but small stocks of cattle, and of course had but little manure, even for the hops. I do not propose at this time to discuss the propriety of farmers engaging again in hop culture. I have some pleasant recollections of the old-time hop-pickings, when we used to eat the luscious watermelons and roasted corn in the evenings at the hop-kilns, and when the buxom daughters of the farmers, with their gloves and sun-bonnets stood at the bins day after day through the hop harvest, and when the bag, with a hoop at the mouth was suspended under the trap door in the slatted floor of the kiln, and the dried hops were pushed into it with a rake, and the smallest boy jumped into the bag to tread them down, and had to tread for dear life to keep on the top of them, and prevent being smothered by them. They were pleasant days, which will never come again to me at least. I write now to send you a short article from the *Prairie Farmer*, entitled "Horizontal Hop Yards," which is the invention of a Mr. Collins, and is patented. By the old method, two poles per hill are generally used, costing very heavily.

By this method, only one stake per hill is necessary, and this only sufficiently high to admit of the passage of men and horses under the twine, to cultivate, etc. The stakes are set about one foot in the ground. In order that the stakes may be more durable, they are generally coated with gas tar; tarred hemp twine is also used. In a little publication on Hop Culture, issued by Orange Judd & Co., the following comparison between the expense of establishing a yard by the old and the new modes, is made:—

Cost of yard with long poles, 1400 poles at 20c, $280; sharpening, $10; setting, $7. Total cost, (not counting handling,) after setting vines, $297.

With stakes: 750 feet lumber for stakes, $15 to $20; gas tarring stakes, $2; 25 lbs. twine at 30c, $7.50; setting stakes, $1; putting on twine, 50c; right per acre, $10. Total cost after setting vines, $36.

The stakes are generally made 1 1-4 inches square, though of course the size may be varied. The stakes for the male vines are made longer, say 18 feet, and are not attached to the other stakes by the twine, as they are affected more by the wind, and would be liable to break the twine. The ob-

ject of letting the male vines run higher, is that the pollen may be distributed over the yard. The twine is tied to the outer stakes only, and is wound once about the others.

In the above extract, a method is described by which a large part of the cost of poles may be saved, which, if found to work well, will do away with one of the most serious difficulties in the business. Yours, &c. J. R.

Concord, Mass., Feb., 1867.

CRANBERRY CULTURE.

The following observations by NATHAN BRIGGS, in the *Barnstable Patriot*, will be found to answer most of the inquiries which have recently been made of us in regard to the cultivation of this fruit.

The Choice of Location.—First, cranberries will grow on high, moist land, and sometimes produce well, but their proper place is low and springy, or wet land. The best place, however, is a peat-bog and swamp muck.

Preparation of the Ground.—First, make the surface of your ground as even as possible, and nearly level, with a slight inclination towards a drain, if you have one, in order that it may be easily flowed, and no ponds remain after drawing off the water. This may be done with any material. There should then be put on this level surface, about four inches in thickness of swamp muck or peat, which should be again covered with about three inches in depth of loose sand, free from grass or its fibres, and also from clay or stones. It is not important what the color or quality of the sand, if it be not adhesive, and is free from roots and grass. Clay is not good.

Time of Planting.—From the first of April to the middle of June—on wet ground, continuing through the summer to plant, if convenient, and as it is wished. In dry land those planted in summer sometimes fail on account of drought and heat. Those set late, lose a year's growth, and may as well be set in spring, if the land be not too wet.

Manner of Planting.—The form of planting which has resulted in the most rapid advancement of growth and production, is to scatter whole vines upon a mud or peat surface; then press them into the mud with your foot, and scatter over them light sand, about one inch in depth. Patches planted in this manner seem to be a year ahead of those planted in the ordinary way. The general plan, however, is to set them in hills at eighteen inches apart. Take a pointed stick, say four inches in thickness, through which at eight inches from the point insert a gauge rod eighteen inches long, which serves to govern the distance from one hill to another. With this pointed stick puncture the ground in uniform rows, insert into these holes a small handful of vines, and press the mud around and among them, spreading them about as much as need be.

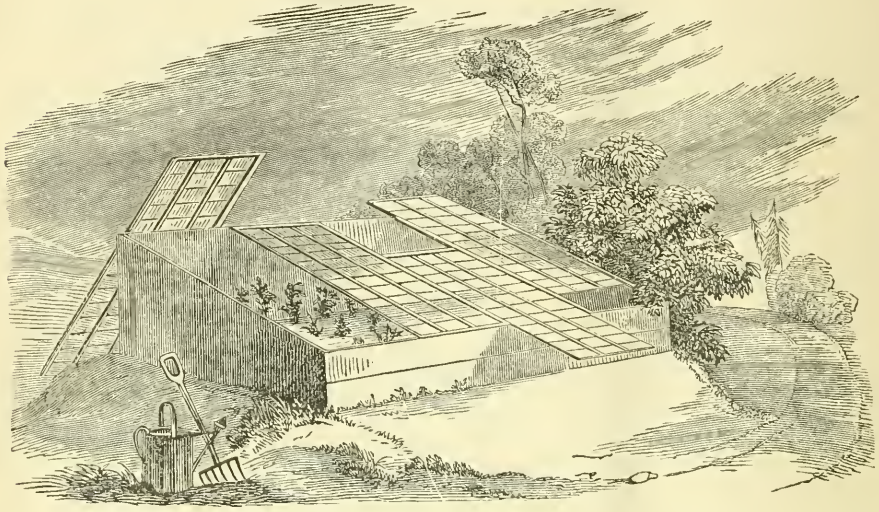
Quality of Vines.—Vines should be procured from meadows which have borne well, and of good fruit, as the best way of knowing good bearers. There are several species, such as egg-shaped, bell-shaped, and cherry-shaped. The former are most approved, and are said to be four or five weeks earlier.

Cultivation.—The cranberry needs little cultivation. Having your land properly prepared as before stated, and properly ditched, and clear of roots and grass, it may require the first year a little hoeing among the vines. After the first year, it would be likely to do as much injury as benefit, by disturbing the young fibres, which are now thickly set. It is better after this, to pluck the weeds by hand, put them in a basket, and carry them off. After the second year, let them alone. The third year you will get a fair crop, the fourth will probably be the best. It is not yet ascertained how many years they may do well. Fair bearing is considered one bushel to a rod; there have been instances of one barrel to the rod. Rushes, and bunches of weeds and grass may at any time be cut out.

Flowing.—Flowing is not absolutely necessary. More than half the meadows which I saw were not flowable. If flowable, the water may remain on all winter, and let off in March. It should be let on about the 20th to 25th of May, and again the 1st of June, for not exceeding thirty-six hours; after this it is not needful. Blossoms are injured by the water remaining on too long, the object of which is to destroy the insects. After the second flowing there is little to fear from them. The grade of the land and the ditching should be so arranged as to easily flood or clear the surface, and the sides of your drains should slope to an angle of forty-five degrees or more, in order to their permanence and utility; the number, arrangement and size being directed by good judgment.

THE CENTAL SYSTEM.—After the first of March, the Boards of Trade of the large grain marts of the country have agreed to buy and sell grain by the 100 lbs. The *Rural New Yorker* gives the following rule by which buyer and seller can make their own calculations:—

The standard weight of wheat per bushel is 60 lbs.; Corn and Rye, 56 lbs.; Barley, 48 lbs.; Oats, 32 lbs. The price per bushel being given, to find the price per cental multiply the price per bushel by 100 and divide by the number of pounds in the bushel. For instance:—At $1.50 per bushel for wheat, what is the price per cental?—$150\times100=15{,}000\div60=\$2.50$, which is the price per cental. Again: The price per cental being given, to find the price per bushel multiply the price per cental by the number of pounds in the bushel and divide by 100. Example: At $2.50 per cental, what is the price per bushel of 60 lbs.?—$250\times60=15{,}000\div100=\$1.50$, the price per bushel.



For the New England Farmer.

HOT BEDS.

While to the professional, or market gardener, the hot bed is an essential adjunct, to the family garden it is a very convenient appendage; enabling one to produce the choice products of the garden several weeks earlier than they can be had otherwise. Many are deterred from constructing a hot bed from an erroneous impression that the trouble and expense are greater than the advantages to be derived therefrom. Necessarily the expense may not be very large, as a cheaply constructed frame and sash may be made to answer a very good purpose; but a well-constructed frame, and good glazed sash, if properly taken care of, are the cheapest, as they will last quite a number of years, and the outlay of a few dollars to start with will enable one to have all the advantages to be derived from a good hot bed. One other objection is often urged—the amount of manure needed for the bed. This need be no objection, for the manure may be taken for other purposes after being used in the bed, and being well decomposed is admirably fitted for later crops. Frames constructed of good plank, and, as often recommended, with iron loops on the ends of the sides, to pass through mortices in end pieces at the corners, and fastened by inserting keys through the loops, will make the most convenient ones, as they may be readily taken apart, when through with for the season, and packed away so as to occupy but little space. Sash of three by six feet, well glazed and painted, are about as handy as any size, and as frequently used by market gardeners as any. As the editor very kindly illustrated a cheap and easily-made hot bed, accompanied with remarks, in connection with my former article on "The Garden," the reader will have no trouble in understanding the principle of a hot bed with glass, as shown by the above cut. In constructing the bed, I prefer to excavate a pit about a foot larger on every side than the frame, and some 18 inches deep. Fill this and raise it about a foot above the surface with the manure, and on this place the frame, and bank up with earth, covering the manure five or six inches deep, or more, outside the frame; place the sash on and let the manure steam. When the heat has subsided to about 90°—it will go to 100° or more—spread on five or six inches of fine rich garden mould, well filled with vegetable matter, and in this, after warming up a few hours, sow your seed in drills from front to back side of the bed. The bed should face the south to receive the full benefit of the sun's rays. Beginners are too apt to sow their seed in the hot bed before the heat begins to subside, and thus lose them, and from the failure thus induced, become discouraged; whereas had they hurried *more slowly*, success would have attended their efforts.

I have stated that manure for heating is needed; this is of the greatest importance, and also that it should be of lasting material, that the heat may be continued as long as possible. Horse stable manure, plentifully supplied with strawy litter is commonly used, as this is of a quicker nature than other animal manure. This should be thrown into a heap under cover, as thrown from the stall, a few days before being used—have one-half its bulk in leaves mixed with it and firmly trod. In the absence of leaves, one-half the quantity of

cow manure, well littered, may be used, to make it compact. In a few days it will begin to heat, which is known by the steam rising. When well steaming, throw it over, mixing it well and keep it trim, to prevent having frozen lumps, &c. When used in the bed, spread it evenly over the whole surface, beating it down with the fork well, and if lightly trod to pack and keep even, no harm is done. The object is to keep an even surface when the bed settles, as settle it will, after heating awhile.

Care after Sowing the Seed.

Any one who is indisposed to give some time, and take a little trouble in order to enjoy the luxuries that may be derived from a well-managed hot bed, had better not meddle with one, for we may not expect to enjoy the luxuries of life without care and trouble. Especially where we turn nature and her laws from their course by so direct an interference, more care is required than when less interfered with.

The bed will need protection from the heat of the sun when it shines bright in mid-day, by sliding the sash to give air, or in shading partially; also protection during the night, till into May, in this latitude, by covering with light shutters or straw mats. It will also need to be looked to, that it never gets dry. The water used should be slightly warmed and applied from a watering pot with a fine rose-sprinkler. A neglect for an hour of any one of these little things may result in the entire destruction of the plants that have been started. By failing to give air, or shade, when the sun is hot and clear, the concentrated rays will often burn and ruin the plants. Hence in clear still days it is often advisable to remove the sash entire for an hour or two in the middle of the day. If the wind blows, with a bright sun, slide the sash down a few inches to give air. While guarding against the effects of heat, don't forget the frost, lest some cold snap may leave your tender plants or vegetables with the chills, or you find them frozen in the early morning.

The large variety of plants that the hot bed is useful in starting, or forwarding, early in the season, needs no repetition here; but for all that require a long season, it is almost indispensable, as well as for those early spring luxuries which can be had in no other way as early. March is the proper time for making up the hot bed, as a general thing, in this latitude. WM. H. WHITE.

So. Windsor, Ct., Feb. 12, 1867.

For the New England Farmer.

"GRAPE FEVER."

Doctors say that sometimes fever saves life. I suppose they mean that in the cases alluded to, the fever saves the individual from a worse form of disease. But as "fever" causes undue excitement and loss of strength, I have adopted the heading of this article to call attention to the following question,—Does it *pay* to grow grapes in New England?

The agitation of this question is producing so much excitement in the minds of persons owning land, that there is danger of much money being lost by some of those who will be induced to plant grape vines for profit. The love of money and the necessity of possessing it, is an inducement to industry in good men, but in bad men it is sometimes an inducement to sell that which is worthless and to misrepresent in order to do so. The industrious farmers of our neighborhood are in danger of catching a fever, which, to get patients, ignorant pretenders as well as experienced doctors can produce, and which fever, through the *pocket*, may leave them shorn of their strength; and ever after liable to have an *intermittent* fever when the subject of grape culture comes under their notice.

Under one class of conditions grape culture is *ruinous* to the pocket, under another class of conditions it is *remunerative*.

To those who, by wisdom dearly bought, have proved this to be true, it is a matter of regret that so many persons write about grapes in such a way as to give the impression that the variety of grape they prefer must be the best for general cultivation, without saying anything about the adaptation of the vine to the various conditions of climate, soil and culture; as though it would do well and be profitable in any State of the union—in any soil—where corn will grow.

Distant propagators, personally, by their agents and through the newspapers, are visiting our towns and selling large quantities of vines that are useless, if profit be the object of the purchaser. A large number of the varieties they sell can no more ripen their fruit *here* than the orange or lemon can ripen its fruit in Pennsylvania; and such a degree of ripeness can never allow of profit in their culture.

The demand for vines has been so great, that persons have been led to raise them from parent vines that were unfit, by reason of excessive layering; from these weakly vines, others have been propagated; and again from these, in the same way, many times in succession, until of some varieties it seems difficult to get a healthy plant. What makes the matter worse is, that the demand has called into exercise skill in propagating from even these unhealthy vines, under glass, and from green wood.

Many of these may be nursed and made to do pretty well in a warm climate, by persons whose object is not profit, but when they are sent north they are for the most part useless.

Many of the varieties called hardy are grown from diseased vines; some from wood that is feeble as to size; some from wood that is soft, owing to the soil having too much manure in it, and some from wood that was unripe; none of these can be expected to be profitable, for they

are all weak in constitution, are constantly injured by the extremes of temperature, and will die from causes that a healthy vine would not be injuriously affected by.

A great many vines sold in New England require long nursing, and sometimes uprooting, owing to the injuries received by careless transportation and by passing through too many hands before reaching the cultivator.

That vines raised out of New England will not do well here, I do not say; but, that vines grown here, from healthy wood that is fully ripe, either by layers or by cuttings, and in the open air, are the vines above all others for New England culture, I think but few observing men will deny. I do say, that of all the vines sent here from the States of New Jersey and New York, from one or the other of the causes I have mentioned, a very large proportion of them die, and that to make sure of having the vines we want, it is best to get them as near as possible to the place in which they are to be planted.

In the January number of the *Horticulturist* George Husmann of Missouri says:—"My advice to your readers, North, South, East and West, is to try for themselves for their locations, and, *after trying*, plant that which suits them best, not what some would-be authority, a thousand miles off, recommends as the best grape, superior over all others."

Now, provided the soil be suited to the grape, and the culture be adapted to the wants of the variety cultivated, what has been said will suggest why many that have caught the "grape fever" have lost much strength through the pocket; while on the other hand, all who have been affected with "grape fever," and have been treated properly by Dr. Grant and other doctors in our profession, have, under the conditions herein indicated, in all cases, found "grape fever" useful in saving them from worse forms of excitement, and proved that on the rod or the acre of land, more profit is made than can be realized by the culture of any other fruit on the same kind of soil.

I have not written a word for a newspaper since the "Basket-Willow Fever" was so destructive. If I am considered as correct in my views of "grape fever," as it has been proved I was in regard to the "Willow fever," and my remarks as acceptable, I have some other things to communicate, which, in the last ten years, I have learned while growing, buying and selling grape vines. John Fleming.

Sherborn, Mass., Feb., 1867.

For the New England Farmer.

PHILANTHROPY IN PASTURE.

It is certainly an honor to a Christian people to be engaged in multiplied measures to better the condition of communities and individuals. The building of light-houses and the improvement of harbors, at a nation's cost, is justified by the consideration of a public benefit. Philanthropy may plead for a better compensation to seamstress or scavenger, because of the demands in either case; and those who scant the wages of the workingman or workingwoman may claim plain rebukes from Christian pulpits. But we are after another idea now,—out in a New England pasture.

Our idea is, that he who will show a true and proper way, within the means of the many, to revive the productive power of the pastures of New England, to meet our natural wants in that direction, will be a greater benefactor of the poor than he who makes the best breech-loading rifle, or constructs the best telegraph, or builds a college, or founds an orphan asylum. Those who have thought little about it, may think that this is extravagant thinking.

We have walked among the workers, and looked among the horses, cattle, sheep and children; and the workers on the hill-side have wondered how the pastures could be made productive; the horses, cattle and sheep have shown their hair or ribs in sympathy with our subject; and the little rosy cherub has crowed over the full-flowing pail at milking time. And so our subject is full of the very fat of farming interest and necessity.

We will not—dare not—claim to be equal to the emergency, able to give an answer to those who ask most anxious questions—and mourn over the mosses and other mischiefs of our pasture-picture. We would make haste to seize the honor if we only could. But a few simple suggestions may do some good.

A valued and honorable farmer asked the simple question, "How can I do what is needed to make that pasture productive?" In answer, it was suggested that very much pasture land, that cannot easily be plowed, needs to become acquainted with the power of a *mattock*, until its junipers and similar intruders and nuisances find that "axe laid at the root," to their destruction. Why let a thousand such thieves steal the sunlight and soil-strength from the growing grass?

To find how, best and cheapest, the soil may be made most productive, measure off a narrow strip, say a rod wide, right through the pasture, and set sufficient bound-marks. Make a record of the time of doing it. Then on one rod sow evenly a quart of good, ground plaster, which will be nearly at the rate of 500 lbs. to the acre; on the next rod sow two quarts, the next four, and the next six, and the next eight quarts to the rod,—which would be about equal to one-half ton, or three-fourths of a ton, a ton, &c., to the acre. And if you will, try a mixture of plaster and superphosphate of lime, half and half, a quart on one rod, two quarts, three quarts, four quarts, &c., to the rod, on as many as you like. Make a critical record of all, so that results may be clearly understood. Take also hard-wood ashes, and try a half-peck to the rod, a peck, &c. Also soft-wood ashes, or lime, or any agent within reach, in varied quantities, one, two or any

number of rods. Note the results from time to time, and follow out this simple plan to the practical proofs, and we think it would soon be found that our philanthropy going to pasture was something else than a crazy idea. If not, it would not cost much to test it. And what a man knows, he knows. What he will not learn he cannot know. A. G. C.

Lee, N. H., Feb., 1867.

HOW TO MANAGE YOUNG LAMBS.

Having had the sole charge of young lambs for several years, and generally very successful, I will give my experience. A young lamb that the mother will not own, and has not strength to suck, I bring into the house, wrap it up in an old blanket, and place it near the fire; then get some ewe milk, warm it slightly, and feed the lamb, a little at a time, (three teaspoonfuls, say,) every twenty minutes, till it begins to revive. I then moisten my finger in the milk, and insert it in the lamb's mouth, repeating this operation until it learns to suck readily. It will then take its milk readily from the ordinary glass sucking bottle, with a nipple used by babies. Care should be taken to feed sparingly; I killed many lambs by overfeeding, when I first commenced raising them by hand.

If you wish to return the lamb to its mother, do not keep it from her too long; return when warmed and its stomach filled, and confine the two in a small pen about four or five feet square —suckle it often, holding the ewe for that purpose. It is a good plan to bring a dog near the pen; the ewe will eye the dog angrily, commence stamping her fore foot, otherwise standing perfectly still, and the lamb, if inclined to suck, will then have a good opportunity. The presence of the dog seems to arouse all the motherly instincts, and she will turn round her head and caress the young one with true maternal regard. By persevering, I never have any difficulty in making a ewe own her offspring.

It frequently happens a ewe will drop twins —one strong and the other weakly; the one most needing her affectionate care will be discarded. It is a good plan in this case, after warming and suckling the weak lamb, (if chilled,) to shut the ewe with it alone, keeping the other away from her. (The dog operation here comes into play admirably.) Do not keep the favorite from her too long, however —not over a couple of hours, say—or she will forget it. In conclusion, I will say, whoever attempts to raise lambs, particularly early in the season, must have a warm building, fronting the south and west if possible, so arranged that the ewes can be shut up in very cold weather—a number of small pens is necessary. I sometimes have a half dozen different lots, all requiring a little different management, and then, most of all, close attention is requisite. Get the young lambs through two days, and the worst is over. When they are old enough to pick at hay a little, place some Indian meal in troughs at the side or end of the building, so arranged by nailing boards in front that only the lambs can get at it. It is astonishing the quantity they will eat in this way, and the extra growth it produces. I should have remarked before, if you intend to raise the lamb by the bottle, give it ewe milk for two days, and after that cow's milk diluted, half water, and warmed to blood heat.

If the above experience of one who has been eminently successful as a *lamb raiser*, is faithfully and patiently carried out, my word for it the next census will show a material increase in the number of sheep throughout the length and breadth of these United States.—*Horace Maticer, Blooming Grove, N. Y., in Country Gentleman.*

Dairy Products of Vermont.—The quantities of butter and cheese shipped from St. Albans, (Vt.) depot during the year 1866 were: Of butter, 2,617,195 pounds, and of cheese 862,485. The shipments for 1865 were: Butter, 3,035,257 pounds; cheese, 1,174,251 pounds. These figures, at the first glance, would indicate a startling decrease in the dairy productions of Franklin county for 1866, compared with the preceding year. But the St. Albans *Messenger* says the abrogation of the Reciprocity Treaty in March completely cut off for the year an importation of butter for shipment which has been quite extensive. In 1864, when Canadian importations were included, the shipments were: Butter, 2,474,854 pounds. Hence it appears that the butter production of Franklin county alone in 1866 was 145,000 pounds in excess of any previous annual production combined with importations from Canada; while the deficiency in cheese is only 40,000 pounds.

Swine.—The total hog crop of the West for the winter of 1866 is stated at 1,406,239, as compared with 1,391,518 during the winter of 1865. Chicago packed 382,000 the present season; Cincinnati, 380,005; St. Louis, 136,000; Louisville, 162,000; Milwaukee, 86,009; and Indianapolis, 50,130. In 1865 Chicago packed 501,403; Cincinnati, 354,079; St. Louis, 11,760; Louisville, 91,000; Milwaukee, 92,000; and Indianapolis, 36,000,

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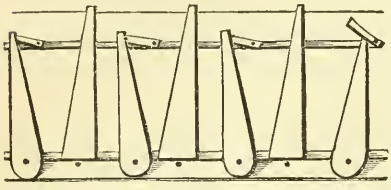
Agriculture in California.—There are now about 4,000,000 acres of land inclosed in California and about 1,750,000 acres under cultivation. These are far larger areas of improved land than was ever before reported. Three years ago the amount of land under cultivation was only 1,107,984 acres. Most of the increase since was made last year. A considerable portion of it was in the larger mining counties, which are beginning to claim import-

ance as fruit and wine growing districts. The area planted to wheat was about 500,000 acres a gain of 200,000 acres in three years. The yield was 12,000,000 bushels, or 7,000,000 more than in 1863. The barley crop also shows a great increase. In 1863 it was about 4,000,000 bushels in twenty-four counties, including all but three or four of the strictly agricultural counties. This year it is returned at over 14,000,000 bushels in forty counties.

EXTRACTS AND REPLIES.

STANCHIONS AND STABLES.



I saw in a recent number of the Farmer a plan for cattle stanchion. To this and all other plans which I have used and seen for fifty years, there are more or less objections. The above cut represents a style which I prefer.

Having laid the stable floor, with an inclination of three inches in 12 feet, set off 30 inches from the front or place of feeding, by striking a line; then take two planks 8 inches wide, set them edgewise on this line; put the upright pieces of the stanchion between them, (as seen in the cut,) and spike the plank to the main or long uprights. After rounding the lower end of the short uprights, to prevent clogging with chaff, &c., put a pin through the bottom for them to turn on. Then nail a piece of board 5 inches wide to the main uprights on each side, letting their upper edges come even with the top of the short upright. Now put a latch or fastener between these, back of the short uprights, so that when closed it will drop and make it fast. It is a good plan to run a shaft the whole length of the stable, inside of and at the top of main uprights; then with a string connected to this and each latch or fastener, so that, in case of fire, you can turn the shaft, raise all the latches at once, and rush the cattle out of the stable.

The upright pieces that compose the stanchion are made as follows: Take a plank long enough for the stanchion, which will be about 7 feet, and 12 inches wide. Slit it by commencing three inches from one edge, running to the other end three inches from the opposite edge. Put the wide ends down. The top of main uprights are fastened by nailing a strip of board each side of them to the joist above. The stanchions should be three feet from centre to centre.

This plan is cheap, strong and durable. One man with a little ingenuity can put up in a day enough for twenty head of cattle.

The stable floor should be at least 12 feet wide, with a rise on which the cattle stand of at least 5 inches. For cows, planks for this rise 4 feet long are sufficient. This leaves room behind them for the droppings, and to put sawdust or dry muck to spread over the place at each clearing out of the stable. This last is very essential, and will never be neglected by a good farmer. Saw dust, muck or leaves, will absorb an important part of the manure, which is oftentimes lost.

We want a plan for barns both on level ground and side hills, the expense of which will place them within the reach of farmers of limited means —with cellars, of course. I have plans which I am thinking of offering if no better ones are given by others. E. P. Luther.

North Dorset, Vt., Feb., 1867.

Remarks.—The foregoing article was written with a pencil. After having been through the hands of engraver and compositor the marks were so badly defaced as to cause the proof-reader much trouble and uncertainty in determining whether our printers have "followed copy" or not, in their attempt to reproduce the facts and figures of our correspondent. Correspondents can hardly appreciate the difficulty of "setting up" a manuscript written in pencil.

COMPOST FOR A POTATO CROP ON MUCK LAND.

I own a piece of bog land containing seven acres, on which I planted potatoes last year, and I intend to plant the whole field with potatoes this year. The land is well drained, and sanded sufficiently to give it firmness. Was plowed last October, and turned over as mellow as a garden.

I am making a compost from the manure of one horse, a yoke of oxen, and two hogs, and using sand and coal ashes, for an absorbent; but I cannot make enough in this way to manure the whole field. How shall I supply the deficiency? Will coal ashes, plaster and salt make a good compost?

The compost made from my cows, is on the plan recommended by yourself and the Hon. F. Holbrook, of Vt., and published in the "Patent Office Report on Agriculture, for 1856," which I have constantly practiced since, and which I intend to follow, believing it to be the very best way in which muck can be converted into one of the best of manures. This compost I want for my upland, believing it better adapted to such land than to the bog.

If you will give me your advice as to what course to pursue, you will oblige me, and many others who are cultivating such land in this vicinity.

No. Tewksbury, Mass., 1867. Thomas Bridge.

Remarks.—We are glad to learn that you have succeeded so well in composting and using muck. Green crops plowed under, and a plentiful use of muck, may be made to convert most of our New England lands, hard and repulsive as they now are, into pliable and fertile soils.

Coal ashes, plaster and salt, with muck would make a valuable top-dressing for grass lands not so far run out as to be nearly exhausted of roots. Perhaps it would bring a fair crop of potatoes in a bog that had been cropped only one year. If you dissolve potash, at the rate of one pound to the square rod, and mix it well with the ashes, salt, plaster and muck, you will scarcely fail of securing an abundant crop. Common nitre (saltpetre) may answer the purpose instead of potash. For an acre, 200 lbs. would undoubtedly be better than 160 lbs. The crop of potatoes might not be larger, but future crops would feel its force for several years.

BONE MEAL.

I have read with interest the correspondence in the New England Farmer of late, relating to bone meal, and should be glad to see the subject more fully discussed, and experiments with the article, as a fertilizer, more generally reported through the press. Every farmer is more or less

interested in the subject of manures, whether they be *special* or otherwise; and such facts and experiments as prove and test their worth as fertilizers, are especially important. Guano, phosphate of lime, and other patent manures have been very generally used for years, and in many cases are considered profitable.

Bone, as a fertilizing agent, has long been used in the old countries with success; and with the machinery and facilities for crushing and grinding, now possessed, it will, without doubt, prove a profitable fertilizer to the agriculturists of this country. And here let me remark, that a machine has been invented, and is now in successful operation, at the *Vermont Bone Works of Paddock, Dean & Co.*, St. Johnsbury, Vt., by which bone is ground in its natural state, and fitted for either fertilizing or feeding purposes. I refer to Dean's Patent Bone Mill, the size of which is 10x17 inches, and its weight ten hundred pounds. It requires from four to six horse power, and will cut from one to two tons of bone per day. It is very simple in construction, and can be readily attached to any steam or water power machinery.

I enclose a specimen of the bone meal as received from the manufacturer, which they warrant to be pure, unburnt, unadulterated bone. Our farmers are using it to some extent with very satisfactory results. I understand the company have machines and patent rights to sell, which they would do well to advertise in our agricultural papers; for it is through such a medium that the progressive, business farmer is reached. I. W. Sanborn.

Lyndon, Vt., Jan., 1867.

Remarks.—The bone sent us looks as though it were *rasped*, instead of ground, but is sufficiently fine readily to pass into the fermentative state, under favorable circumstances. We are glad to learn that mills for reducing bones are in operation so far in the interior. They will be the means of preserving and bringing into use large quantities of one of our most valuable fertilizing agents.

COMPLIMENTARY—FLOUR OF BONE.

I have long owed you a communication. I have prepared a hundred articles in my mind for your paper, while about my work, which increasing cares and a decreasing inclination to write, have prevented your seeing. Meantime the Farmer has continued a welcome visitor. It is now a handsome paper. The type is of refreshing clearness. It is well arranged. The Market Reports are full and valuable. I have often been guided by them in selling and buying, to my advantage.

I wish more people would advertise in your columns articles and animals that farmers want. Such notices are interesting to read, and bring profit, sometimes, to all concerned. I never buy famous medicines, nor believe parties pay such tremendous wages to "active" young men!

That communication from Rufus Nutting, giving the results of experiments with the flour of bone, interested me a good deal. It seemed a fair and candid statement, and was not flattering to the article. Still, I do not think those experiments were conducted so as to show the value of flour of bone. It does not appear in any case that the bone was fermented, or digested, before using. I understand that, when applied to crops in a crude state, it is not plant food. Dr. Nichols, in his late excellent lecture before our Lyceum, said he mixed it with diluted sulphuric acid. Whose practice is the necessary one, that of the chemist or that of the unbenefited Vermont farmer?

I want very much to have the flour of bone prove a most valuable article. I have an interest in some distant land to which it is not expedient to team heavy manures, and a condensed fertilizer would be just the thing. W. D. Brown.

Concord, Mass., Jan., 1867.

Remarks.—How many articles "prepared" for our columns, in this way, are every year lost to the world!

EARLY POTATOES.

What is the best kind of early potatoes for a climate similar to Boston? The price of them a bushel in Boston? The best kind of manure, phosphate of lime or fish guano? The number of pounds to an acre, and cost of it.

Franklin W. Carson.

North Oxford, Mass., Feb. 13, 1867.

Remarks.—We do not know which the best kind of early potato is. We heard the question discussed at a farmer's club, and scarcely any two were agreed upon it. There are as many prices as there are kinds, varying from $1 to $3 per bushel. The Early Goodrich, new and in great demand, $3; Sebec, $2; Early Jackson, $1.

The kind of manure used ought to depend, in a considerable degree, upon the kind of land on which they are planted. If low, heavy land, use coarse, unfermented manure. If dry, use fine manure. In either case, a handful of plaster of Paris in each hill, will prove of service.

No experiments have been made, to our knowledge, between superphosphate and fish guano, for potatoes. Try both, at the rate of 400 pounds per acre.

A VERMONT HORSE.

Mr. Wm. W. Day, of Lunenburg, Essex County, is the owner of a gelding horse of the French Morrill blood, that was four years old the 22d day of last June, and weighed the 1st of December, fifteen hundred and fifty pounds. This colt is a bright bay, black mane and tail, good style, and stands seventeen and a half hands high. Whose colt beats this? F.

Lunenburg, Vt., Feb. 16, 1867.

FEEDING COWS AND HOGS—WOOD FOR TROUGHS.

How much corn meal can be given to a milch cow daily, with safety? Can shorts be given to a cow without injuring the butter?

Can oil cake be given without injuring the cow?

Does corn fodder, fed to a cow green, increase the quantity or improve the quality of her milk?

What kind of wood is best for a hog's trough, and for the flooring of their pen?

Is it judicious, in fattening hogs, to keep them wholly on a plank floor, to prevent their rooting?

If hogs are salted alive, should the salt be given to them clear, or mixed with their food?

If the latter, in what proportion?

When hogs are kept almost wholly on meal, should much liquid be given with the meal?

Derry, N. H., Jan. 4, 1867. E. B.

BEE CULTURE.

I think the best hive is one about 30 inches high, and one foot square, with two draws in the upper part, four inches high and six inches wide, with a glass in one end of the drawers. The hive should have two fly holes, one at the bottom, the other about eight inches above. The lower entrance

should be cut in the bottom board and slant up into the hive. This gives the bees a better chance to defend themselves, and keeps the water from running into the hive. The fly-hole should face the west, summer and winter. If it faces the south or east in summer, the bees are tempted out too early and get wet with dew, and fall to the ground and perish. In winter, the sun shining on the fly-board excites the bees, causing them to sweat, and increasing the liability to freeze and perish on the return of cold. Both fly-holes should be closed in winter by tacking tin over them with little holes made through it. N. S., JR.

February 4, 1867.

WINTER.

When storm-cloud, with its flakey wing,
Veils noon-tide ray to half a night,
And darkness, with its snow-hid track,
An hour too early shuts the light;
From outer world and work we come
To the defences of our home.

Crackling fire and hearts contented;
All the armor that we need;
Busy group with cheerful faces
Listens what the dame may read;
So glad the "FARMER" came the day
Before the snow-storm blocked the way.

Vermont, 1867. K. K.

THE SICK COCKEREL.

I noticed an inquiry concerning a rooster which had lost the use of his legs, and would recommend that he be kept in a moderately warm place, and fed three times a day with a dough made of one pint of Indian meal and one teaspoonful of red pepper. Also rub his legs with camphor once a day, and I think he will get well soon.

A. L. BARNES.

South Barre, Vt., Feb. 18, 1867.

CURE FOR CHILBLAINS.

Wet the stocking over the parts affected with spirits of turpentine, and wear as usual. My neighbors have tried it with good success.

BENJ. SARGENT.

Grantham, N. H. Feb.5, 1867.

REMARKS.—We think it would be well to be careful about the quantity used in "wetting the stocking."

CULTIVATION OF CRANBERRIES.

In reply to "E. E. A." I would say that to grow cranberries you want, in the first place, a meadow that you can flow in a few hours in the fall of the year to keep the frost off. If you have not got this, you can raise them without water. If you have the water, make your meadow as level as you can, so as to require as little water as possible to cover it. Then ditch it dry and take off the top surface, or turf it as it is called. After this spread on sand, not gravel, two or three inches thick. When you select your vines get those that bear from the root to the end of the vines, not those that bear on top only, and set them out in rows two feet by six. They should be hoed so as to keep the weeds out until the vines cover the ground. N. S., JR.

Milford, Mass., Jan. 8, 1867.

REMARKS.—The use of water is about as important in the *spring*, to prevent frosts, or in the early summer, to destroy the eggs of the insect that infests them. This insect is very much like the common apple worm. It attacks the *new* growth at or about the time of blossoming, commencing at the base of the new and working upwards. Its presence may be known by the appearance of a fine web which encircles the upper portion of the plant. The FRUIT WORM is the most destructive, making its attack on the berry about the last of July or the beginning of August. This is another time when the use of the water is important, and, indeed, is the only remedy known to save the vines and fruit from these two insects. But the *flooding* must be done with care. If the weather is hot, it will not do to leave the water on long, as it will become warm and rot the vines. From 24 to 48 hours will probably be enough to drown out the insects. The temperature of the water must be tested by placing the hand in it. The appearance of the web, spoken of above, will indicate the time for flooding.

The plan suggested by our correspondent seems to us a judicious one. See an article in another column on the subject.

GRAFTING.

Will you please inform me through your valuable paper how and when to graft apple trees, what time of the year to cut scions, how to make grafting wax, whether it would be best to graft old trees that are in a good condition, and if it would be best to scrape the rough bark from old trees, and when to do it? A SUBSCRIBER.

REMARKS.—There are various styles of grafting, but the "Cleft," as seen in the margin, is the most common. Mr. Cole, in his Fruit Book, gives the following directions:—

"Saw off the stock with a fine saw, and pare smoothly with a sharp knife; then split the stock with the grafting-knife, and open it with the wedge on the same. Or a common knife and a wooden wedge may be used. Sharpen the scion on both sides, with a straight scarf like a wedge; let the scarf be about 1½ inches long, more or less, according to the size of the scion and the splitting of the stock, making the scarf of the scion as long as it can be conveniently fitted to the stock. It is best

for the stock to cover, or almost cover, the scarfs on the scion. The outer part of the scion should be slightly thicker, to make a close fit there. Leave two buds on the scion, setting the lower buds just below the top of the stock. Adjust the scion so that the joint between the bark and wood, in the stock and scion, will exactly correspond; this is important, as that is the place of union between them. This done, withdraw the wedge, and apply the cement or clay. In cutting scions, reject the butt, as the buds start reluctantly or not at all, and reject the top also, as it is too soft, or may be winter-killed.

Scions may be cut at any time from November to the time when the buds begin to swell in the spring. The best time, perhaps, is a few weeks before setting and the swelling of the buds. They must be kept moist, by rolling in a damp cloth and laid in the cellar. April and May are the usual months for grafting.

To make grafting wax, take 1 part good beef tallow, 2 parts beeswax, 4 parts white, transparent rosin, melt all together, turn into cold water, and work and pull it thoroughly, as shoemaker's wax.

If used when the weather is cold it must be kept in warm water.

If the trees are thrifty they will not generally need much scraping; if they are not thrifty it will be labor lost to graft them.

ABOUT SETTING HENS.

In reply to inquiries from "S. A. A.," of North Easton, we would say, we think that hatching out and bringing up one brood of chickens is enough for one hen to do in that line, in one year. Sometimes they will bring up two broods, but often fail, and are worth little after the second attempt.

Some hens wish to set three or four times a year, and various means are resorted to, to prevent it—such as shutting them in a dark place, tying the feet within two or three inches of each other for as many days. Some practices are resorted to which are cruel, such as plunging them into cold water, or withholding all food from them for a time.

Do not allow a hen to set in the same nest where a brood has just been hatched out, without first cleaning it out in the most thorough manner, and washing it out with ashes and water or strong lime water.

Hens may go to setting now, if a warm place is provided for them, and for the chicks when they come out.

Eggs are much more certain to be hatched if the nest is large and composed, at the bottom, of earth, and then lined with a little soft hay or straw. When hens steal their nests, they usually place their eggs upon the ground; this becomes so thoroughly warmed that when the hen leaves the nest, for food and exercise, the heat from the earth is imparted to the eggs, and keeps them warm until the hen returns to them.

A CROP FOR AN ORCHARD.

I have a young orchard of one acre of land; the trees shade most of the ground. It has been grassed over for four or five years. Last fall I had it plowed. What crop can I put in that will be the best for the trees, and return me the most for my labor? I have plenty of manure for the land—how shall I use it? A SUBSCRIBER.

Quincy, Mass., Feb., 1867.

REMARKS.—Hoed crops would be better for the land—such as potatoes, cabbages, carrots, &c. If you apply plenty of manure, a grain crop of barley or oats would not injure the trees. We have known sweet corn to be sowed broadcast, and harvested for fodder in a green state, or cut up and dried for winter use, and with excellent results. If you have cows giving milk—and especially if a little short of pasture—perhaps the best thing you can do with the orchard will be to put in a crop of corn for fodder.

LEASING FARMS.

A few weeks ago I noticed a very well written article on the subject of tenant farming in this country, somewhat after the plan practiced in England. Now if any one believes that the thing is practicable in this country, and I see no reason why it should not be, I hereby offer a good farm of 100 acres in Massachusetts, sufficiently remote "from town" to give cheap land, and at the same time within four miles of as good a market, as there is in that State, to any responsible man for experiment, for from one to five years, on a lease at 6 per ct. per ann. on valuation, and all taxes. He may do what he pleases with the farm and its products, the same as if they were his own. The valuation of farm and improvements may be made by three disinterested men. Here is something tangible and practical on the subject, and is intended not as an advertisement, as I do not care to lease the farm, but as a test of the faith of anonymous contributors, who are pleased to air their theories in the public journals from time to time, and to intimate to them that to be of value their suggestions must be practical, and that they should also be able to find those who will practice them.

J. GEO. HUBBARD.

Derry, N. H., Feb., 1867.

HEN MANURE, WOOD ASHES, RICH LAND.

Some time ago I asked what I should do with some five barrels of hen manure—the clear droppings of the roost. In your "Extracts and Replies" you advised putting it in the corn hills at planting, &c. When I made the inquiry I stated that I cultivated but a *small* garden, &c.

Now I have ten barrels of manure, the same garden, *no corn field*, and raise what they call in York State, "garden truck," viz: peas, beans, potatoes, asparagus, tomatoes, melons, cucumbers, turnips, mangolds, carrots, and parsnips, etc., etc., and about twenty hills of sweet corn. I have too much manure for the twenty hills of corn. What shall I do with it? I wish to use it about the garden if I can do so to advantage. What is it worth per barrel to sell to green-house gardeners or others?

What is the best thing I can do with good wood ashes? I have one hundred bushels, and the garden before mentioned, which is old and rich, has been for years stuffed with good manure,—as the hay fields have been also. One of the fields is usually too wet in the spring to cart on the manure without "cutting it up." RALPH.

Randolph, Mass., Feb. 10, 1867.

REMARKS.—Sell the hen manure. We do not know what it is worth. Sell the wood ashes. The ashes are worth $30 for the hundred bushels, and haul them some distance if they are pure. Can it be possible that you are correct? That there is one piece of land in Massachusetts that does not need manure! Even on an old, rich garden, we should suppose wood ashes would prove profitable, unless it had been dressed with them frequently.

CURE FOR THE LAME FOWL.

In reply to an inquiry for a cure of a Brahma fowl that lost the use of his legs, I will say that I have had many chickens that were hatched early, say in February and March, and kept in the coop till May, as well as those three or four years of age, lose the use of their legs. I have cured them in a few days by separating them from the other fowls and putting a few drops of Iodine in the water. Of late I have kept iron, such as old nails and pieces of iron hoops, &c., in their water, and have not been troubled in this way since I adopted this plan. JAMES BUFFINGTON.

Salem, Mass., Feb. 23, 1867.

VERMONT WHEAT GROWERS.

I wish some of our Vermont farmers would give us some information relative to wheat growing in

Vermont, telling us whether winter wheat or spring wheat succeeds best—and put their names to their communications, so that we can correspond with them, and buy some of their wheat for seed. Since flour has gone up to sixteen and eighteen dollars per barrel, it is time for farmers to try to help one another; for, with present prices and high taxes, I am fearful we shall drift on to breakers, especially if our representatives, as in Massachusetts, vote themselves $600 per session.

Caleb E. Parmenter.

Attleboro', Mass., Feb. 21, 1867.

CHEESE-MAKERS' ASSOCIATION.

The third annual meeting of the Massachusetts Cheese-manufacturers' Association, was held in West Brookfield, on Thursday, Feb. 24, Capt. Hollis Tidd, President, in the chair.

Officers elected for the current year, were, for President, Hollis Tidd; Vice Presidents, D. S. Ellis, Warren, and J. F. Davis, Barre; Secretary, N. S. Hubbard, Brimfield; Treasurer, B. F. Hamilton, New Braintree. The Executive Committee is constituted of the foregoing list of officers.

Reports were received from Barre Central, Barre South, Hardwick Centre, Hardwick South, Petersham, New Braintree, Worcester Co. in Warren, and South Adams Factories. We give the two following as specimens:—

Barre South.—Capital, $5053; began making April 24, and ended Nov. 8; amount of milk 707,297 lbs.; lbs. of milk to a lb. of cheese, 10.46, or nearly 10½; cheese kept before sending to market on an average about 55 days; size, 853 weighed from 70 to 80 lbs. apiece, and 726 from 18 to 22 lbs.; help, 1 man and 1 woman, at a cost, including board, of $575.93; cost of making per 100, $1.93; amount of cured cheese, 67,570 lbs.; av. number of cows, 175; lbs. of cheese per cow, 406; av. market price, $19.85 per 100; net return to farmers, $16.92 per 100 lbs.

Hardwick South.—Capital, $4500; began making May 10, and ended Oct. 15; amount of milk 722,526 lbs.; lbs. of milk to a lb. of cheese, 10.3, a little over 10¼; cheese kept before marketing, from 3 to 6 weeks; help, 1 man and 1 woman, costing $511.56; amount of cured cheese, 70,963 lbs.; net return to farmers, $15.60 per 100.

Process of Manufacturing, as stated by Mr. Green, of the New Braintree Factory, was as follows: Heat the milk before putting in the rennet to 84 degrees; then let it stand from 1 to 1½ hour before crossing; cross and let it stand 15 or 20 minutes, then break up the curd carefully with the hands and heat to 90° to 98°, and cover up warm and let it stand until cooked; then dip out into a sink and let it drain dry and salt at the rate of 2 7-16 lbs. per 1000 lbs. of milk, then press 24 hours.

Facts or statements came out in the discussion, incidentally, of great interest, such as this: a man who kept three cows, sent his milk to the factory, who got but $20 return for them before, per annum, got $40 return per cow after sending his milk to the factory. Mr. Greene, of New Braintree, made some interesting statements on this point, such as it took a lb. less milk at the factory than in the house dairy at home. His statements were founded on actual experience, and are therefore worthy of consideration. One gentleman stated that the net return to the farmer from the milk sent to the factory would exceed what he could get from the cheese made at home; thus showing the labor of home-making, with rennet, fuel, marketing, &c., may be reduced to that of carrying the milk to the factory, and he be the gainer. It was also stated that those factories which made the smallest sized cheeses returned the largest amount of profit on the milk used.

The Convention was well attended and harmonious in its action, which, taking it all in all, was by far the most profitable meeting of the association yet holden, thus demonstrating that the association of those engaged in associated labor tends to promote progress and improvement by the diffusion of useful knowledge.—*Boston Cultivator, abridged.*

New York.—At the Winter Meeting of the New York State Agricultural Society, at Albany, Feb. 13, the following officers were elected for 1867.

President—Gen. Marsena R. Patrick, Ontario.
Vice Presidents—Thos. H. Faile, Jr., New York, and seven others.
Corresponding Secretary—Benj. P. Johnson, Albany.
Recording Sec'y—Erastus Corning, Jr., Albany.
Treasurer—Luther H. Tucker, Albany.
Executive Committee—Geo. H. Brown, Duchess, and 7 others.

As usual at this meeting, premiums on grain, roots, butter, fruit, &c., were awarded. X. A. Willard, Esq., delivered an address on English farming.

Hops.—Mr. Z. E. Jameson, of Irasburg, Vt., writes to the *Country Gentleman* that a field in that town which produced 2000 lbs. in 1865 yielded only 200 lbs. in 1866. In years past roots were given away. Now they cannot be obtained without difficulty in sufficient quantities to replace the dead hills. The runners which are cut up into sets seem diseased. Whether this state of things is wholly the effect of lice or partially the result of cutting the vine before the hop is fully matured, causing it to bleed and exhaust the root somewhat, I cannot say. There seems to be a prospect that this branch of agriculture will soon become extinct, unless the causes which have proved so detrimental can be removed.

—It is no uncommon thing in Scotland for farmers who enter upon a lease of 19 years, to invest some $50 to $75 per acre on drainage, liming and other improvements.

DURHAM BULL---CHICAGO DUKE.

Five years ago the range of prices on beef cattle at Brighton, as stated by our present reporter, was $4.50 to $6.50 per 100 lbs.; last week it was stated by the same individual at $10.50 to 14.00—the average price being now more than twice as much as it was five years ago. It may also be remarked that the present high rates have been firmly maintained for about a year and a half.

Five years ago mutton sheep were reported by the same authority at $4.25 to $5.75 per 100 lbs.; last week $4.00 to $7.25—a comparatively small advance.

In England, previous to the great disturbance of prices by the sad effects of the cattle plague, beef had been gradually but steadily advancing for a series of years, while wheat has been as steadily declining in price, during the same period.

Statistics which we need not hunt up, as the fact is obvious to the most careless observer, show that in the Eastern portion of the United States, cattle are decreasing nearly as fast as population is increasing. In 1862 there were 35,405 head of cattle from the Western States sold in Brighton market; in 1866 the number

was increased to 68,661,—nearly double, although large numbers were received from the Northern part of New York, from the Canadas and New Brunswick.

Are not these considerations sufficient as a hint to the wise and thoughtful farmer? Have we not, here in New England, in the laudable ambition to increase the production of wool and other necessaries of life, overlooked in too great a degree the wisdom embodied in the proverb, that "Much increase is by the strength of the ox?" A few far-seeing individuals among us—the Chenerys, Whites, Loomises, Langs, Andersons, Meeches, Hydes, Eames, Pierces, Winslows, &c., &c., seem to appreciate the importance of stock raising to the prosperity of the New England States, and are quietly preparing the means for a great improvement in this branch of farming, when the attention of agricultural societies and of individual farmers shall be turned to this subject,—when, in fact, the agricultural press shall give the breeding of stock that prominence in its columns to which it is entitled, as compared with poultry-raising, bee-keeping, &c., &c.

The farmers of the West are engaging very extensively in the improvement and feeding of neat stock. The fine animal illustrated by the above engraving, was bred by R. A. Alexander, of Kentucky, and introduced into Illinois by Hon. John Wentworth, editor and Congressman, as well as stock-breeder, near Chicago. The "Chicago Duke" is a good specimen of the Durham race, and of the "Western Steers" of Brighton market.

Massachusetts Stock.—We learn by the *Country Gentleman* that H. G. White, South Framingham, has sold to Mr. G. I. Seney, New York, the Short Horn cow Hope, by imported Usurper 3522, out of imported Hopeless by Horatio (10,385,) having by her side bull calf, got by 9th Duke of Thorndale 5609. Also, to W. Brown, Hampton Falls, N. H., Lottie by Garibaldi 3918, out of Arabella 7th by Double Duke 1451½, and Inda 2d by Lord Derby 4949, out of Inda by 4th Duke of Airdrie 3842. Also, to G. H. Bartlett, Alleghany Co., Maryland, five head of South Downs, bred from Archbishop stock, and a Scotch Colley dog. Also, Colley dogs to B. T. Hutchinson, Suffolk Co., N. Y., and F. L. Blandy, Ohio.

FARMER'S GARDENS.

NUMBER ONE.

HOPING that some thousands of our New England farmers may be induced to lay out and plant a garden, that shall continue, not only to bless themselves and their households, but to bless their children and children's children for ages to come, we propose to publish, between this time and that for working and sowing the garden, several articles on the subject of *Farmer's Gardens.*

We cannot, in a few brief editorial articles, enter so minutely into the details of gardening as we should be glad to, but shall endeavor to give such plain suggestions as will enable those who have an interest in the matter, to go on understandingly.

A good vegetable garden is conceded by most farmers to be both *convenient* and *profitable*, and yet comparatively few farmers have one. The reason usually given for this neglect is, that they do not have time to attend to it. The *truth* in the case is, that the garden requires a little care daily, and demands thought, patience and system, in order to secure success and profit. Unhappily, these are just what most farmers dislike, preferring to tend the larger crops, where little thought, but more muscular power is required. They would be glad of the rich products of the garden upon their tables, and of the pleasure, health and profit which they would yield to the family; but the habit of neglect in this particular has become so deeply implanted in the minds of the people that no common influence will break it up. With the settled conviction that half an acre devoted to garden culture would annually produce more profit than four or five times as much land in any of the other crops of the farm, thousands of our farmers still remain without a kitchen garden, even, that is worthy of the name. It would seem that pecuniary interests, and the comfort and health of the family would overcome the dislike to cultivate a garden; but the aversion to systematic care overrides all these considerations, and the garden remains only in anticipation, or, in some out-of-the-way place, it consists of a few rows of potatoes, onions and beets, with a few sage

roots and a swamp of weeds, whose only redeeming feature is the presence of winter birds in search of a daily meal of seeds. Without a garden, the winter diet of the family must be mainly confined to bread, meats and potatoes. When warm weather returns, the system requires less stimulating food and demands cooling and juicy vegetables fresh from the soil. There are many farmers who have no garden—not even an apology for one. We knew a case where the wife of a farmer worth ten thousand dollars, went to a neighbor's garden to beg a few fresh vegetables when company was expected. Thousands of farmers' tables are rarely graced with early vegetables, such as lettuce, radishes, early beans, potatoes and peas, when they might be crowned with all the vegetable luxuries peculiar to each season by a little labor and systematic care.

An observing gentleman from another State in writing us on this subject says:—

"No part of the farm pays as well as the kitchen garden, if well taken care of. I do not mean by this that every farmer can make money by raising vegetables for market, because that is impracticable, but it is a self-evident fact that the farmer must procure the support of his family from his farm, and a well conducted garden will produce more towards this than any other part of the farm of four times the extent.

The use of vegetables and fruit as a diet is said by medical men to be conducive to health, and as most people, and especially children are fond of garden fruits, it is policy for every farmer to provide a plentiful supply for home consumption. It would seem that people having all the conveniences that farmers have, as regards land and plenty of leisure time to take care of a garden, would be the ones that would consume the most of such things; but it is true that the people of cities and villages use more vegetables than the same number of land owners. Take a look among the farmers, and you will find that one-half of them have no garden at all, or at most, a little corner in the grain field which is overrun with weeds. Others have a place set apart for the purpose, but do not get time to do anything in it until all the spring farm work is done, thereby making it too late to secure any of the vegetables requiring early planting, and destroying the possibility of getting early kinds. This is a great loss, when we take into consideration that such things are relished a great deal more in the hot weather of June and July, than later in the summer. What is more aggravating than to know that one's neighbor has green peas, new potatoes, string beans and the like, and his own but just up, and all through his own neglect by not planting in season.

And so the farmers' wives and daughters, who, during the first two or three months of summer, have to rack their brains to think of something to get for dinner, which the men can eat—for when they come in from the field, weary with labor, their stomachs are apt to revolt at salt pork and old potatoes. But if there are early potatoes, peas, beans and other vegetables in the garden, they know just what to get for dinner, and when the workmen come in, they eat with a relish, and nothing does the faithful wife more good than to see her husband eat the food she has cooked for him, as if it tasted good.

The garden should be near the house, as housekeepers do not always have time to go far; and if it is close by a great many leisure moments can be spent in weeding, &c., which could not be done if it is remote."

The garden should also be enclosed, so that fowls and other stock cannot enter it. No success can be reasonably expected if fowls are allowed to range in it, as their instincts lead them to the freshly-moved soil for some of their most essential food. They are, therefore, always ready to scratch where the gardener has just fashioned his new beds, planted his choice shrubs or scattered his early seeds. If enclosed, the space alongside the fences may be occupied by raspberries, blackberries, tomatoes and other climbers, which will also serve the double purpose of a shelter to more tender plants. If there is a path between these and the more central portions of the garden, these climbers can be conveniently cultivated from it, and their spreading easily prevented.

"The manure for the garden should be well rotted, and if allowed to remain in a vault or cellar through the summer, all seeds would be killed, thus saving a vast amount of work in loading. Apply the manure in the fall, and plow in immediately, plowing again in the spring, which thoroughly mixes it with the soil. As soon as the weather will permit, plant early potatoes, peas and all kinds of early vegetables, which are not liable to be killed by frost, putting in others along as the season will permit, and when they come up, keep them well hoed and free from weeds, and you will have the satisfaction of having something good as well as your neighbor." When this work is performed early and faithfully it will be altogether more easy to continue planting as the season advances, and to keep the whole in good order. Indeed, when the commencement is thorough, it greatly aids all future operations.

For the New England Farmer.

EXPERIMENTS WITH SPECIAL FERTILIZERS.

It is a difficult task to conduct successful experiments with animal and vegetable life and give them to the public in a clear, accurate and definite form. The novice is little aware how easily he can prove a falsity, how liable to confound himself and mislead others. An experimenter should first acquire some knowledge of the subject he has in hand. He should be a close observer, a patient and diligent searcher for truth, free from prejudice, and open to conviction, as well as comprehensive and accurate in reasoning. With all these qualities, experience increases the power of determining the truth. The agricultural works of this country are deficient in carefully conducted experiments in all departments. The boards of agriculture and managers of our various societies would confer favors upon their constituency, if they would make, or cause to be made by competent persons, experiments of the many new things now urged upon the patronage of farmers, and fearlessly publish the results; or if they would give some simple and explicit directions to those who choose to investigate for themselves.

A large share of the disappointment and many of the conflicting results with the special fertilizer of the day, arise from very imperfect trials. Either the premises are wrong, the details or attending circumstances neglected, or the conclusions are inaccurately drawn.

Take, for example, what is now attracting public attention, "Bone Flour." I know of one instance where it was tried without apparent benefit upon a mowing field which is kept in high condition, and where the grass was cut early; and of another, with like results, upon a market garden, where the land receives heavy dressings of stable and vault manure combined, and where the crops are taken off early. In both these cases the experimenters condemned bones in toto, declaring "bone manure not worth a cent, and they would not apply it if given to them." In both these cases it is plain that the mode of cropping does not take from the land much phosphate of lime, and consequently the very liberal applications of the richest manures supplied all that was wanted.

Again, some have the idea that the flour of bone is intended for a substitute for barnyard manure, and try its effects accordingly. They deal out a spoonful or two in a hill, in one row, manure or wood ashes in the next row, and so on. They look for results in the stalk and leaf; and seeing the great difference in favor of manure, force the conclusion at once, that their land does not need bones.

A slight knowledge of chemistry, which may be acquired in the field as well as in the laboratory, shows that bones or phosphate of lime is highly important in the growth of plants, and through them to animal economy. But it is only a small part of the plant. Other elements are necessary to the formation of the plant than those which bones furnish, or which they can produce out of the soil by any action they may have upon it. It would be as reasonable to expect a child to thrive upon sugar, starch, or butter alone, as plants to grow from the mere application of bone flour. It was never intended as a substitute for barnyard manure. It is only a help, being an expeditious and economical way of returning to the farm what has been carried away in products sold. While the ammonia in guano, and some other commercial fertilizers, goes to form the blade, stalk, and leaf, phosphate of lime develops the fruit, seed and grain,—it tends to perfect the plant, rather than build its fibre and cellular structure; hence its benefits are not so easily determined by the eye. It acts slower than ammonia, and one year is not sufficient to test it, especially if the season is dry. Plants, like animals, require a limited amount and all in excess is rejected, and disappointment will follow large applications, if immediate returns only are expected.

It would be difficult to give rules by which it could be determined what field would be benefited by it; though it is obvious that light and poor soils are sooner exhausted of this element than heavy, retentive and rocky ones, but much depends upon the kind of crops raised and sold, and the mode of cropping. Though exhausting crops are continually raised, there will be little impoverishment of the land if they are spent upon the farm. When seeds, grain, milk and animals are sold year after year, the phosphates are taken away in large quantities. Such farms ought to show good results from their return.

For convenience in experimenting with bone flour, it is advisable to mix it with muck, sand or any kind of dry fine soil. On grain, hay or pasture lands, apply as early in spring as possible. Sow it on a strip across the field. If there are variations in the soil, the strip selected should cross them so as to embrace a part of all kinds. With hoed crops, mark out two equal lots in a favorable part of the field. On one, apply nothing; on the other, sow the mixture broadcast or in the drills. Determine the results or increase, by measure and weight. Trying wood ashes or stable manure at the same time, and comparing their results with that of bones, has nothing to do with the experiment, and is apt to detract the attention from the main point, which is to ascertain how much more land will yield with bone flour than without it. If any benefit is found, a liberal application ought to show good effects several years. Its action and nature prove that it is intended for occasional, rather than constant use. The same may be said of some other special fertilizers, as plaster, salt, &c. It has frequently happened that a slight application of these articles has produced good results; larger and

more frequent applications were given, with the expectation of corresponding increase of crop; no such increase was obtained, in fact their action was soon imperceptible; and disappointment and general distrust in all special fertilizers were the natural consequence. In accounting for failures of this kind, may it not be safely inferred that the land had received a sufficient quantity of these particular elements, and no excess could stimulate the plants to greater growth.

These thoughts are suggested by my own attempts at experimenting, and reading and studying the efforts of others, and are offered to my brother farmers, simply to show that experiments, unless most skillfully conducted, are of no value, however honest may be the motives that actuated them, in giving them to the public, every circumstance that can possibly influence the result should be carefully stated, that all may draw their own conclusions.

Jan., 1867. N. S. T.

Goitre.—A correspondent of the *Rural New Yorker* in Oakland County, Mich., lost most of his lambs in 1862, by goitre, and three quarters of them in 1863. Attributing it to feeding too much corn he changed the feed to oats, but the disease contined just as fatal. The next winter he gave no grain to his ewes, but fed them ruta bagas, and lost about half of his lambs. During all this time the ewes were kept closely yarded, having an open shed, and were let out of the yard half an hour each day. Thinking that perhaps they did not get sufficient exercise, he, in the winter of 1866, when it was not too cold, daily turned them several hours on an old meadow, forty rods from the barn, where they could get considerable green grass. He thus sums up the result:—"A few old crones died and I cannot keep my sheep in quite as good condition as before, but I lost but four lambs out of eighty from goitre—though most of them had it very lightly."

The same amount of study, tact, talent, energy and enterprise that suffices to make a man moderately successful in a professional or a mercantile career will place him in the front rank of the tillers of the soil.

This item is going the rounds of the agricultural press. We wonder at it, for we do not believe it is true. On the contrary we think it would be full as correct to transpose the sentence and say, that the same amount of talent, tact, industry, energy, economy and enterprise that suffices to make a man a moderately successful farmer would place him in the front rank of the professional or mercantile classes. And we appeal to the history of those who have left farming for the professions, and to that of those who have left the professions for farming, for confirmation of the truth of our version.

Addison Co., Vt.—At a meeting of the agricultural Society of this county, at Middlebury, Jan. 23d, Victor Wright, of Middlebury, was elected President; H. O. Gifford, of New Haven and E. S. Stowell, of Cornwall, Vice Presidents; Geo. Hammond, Middlebury, and A. J. Child, of Weybridge, Secretaries: Edward Vallette, Treasurer.

Board of Agriculture.—His Excellency the Governor, with the advice of the Council has appointed Louis Agassiz of Cambridge, and William S. Clark of Amherst, to be members of the State Board of Agriculture of the State of Massachusetts.

The Mothers.—The Vermont *Farmer* says that Mrs. Hannah Brown of St. Johnsbury, who is in her 68th year, has, during the past season, besides doing her own work and a great deal for others, spun 68 skeins of yarn, and woven 400 yards of cloth, and that Mrs. Betsey Church of Chester, 74 years of age, has spun 350 ten-knotted skeins of woolen yarn within the last four months.

For the New England Farmer.

NOXIOUS ANIMALS, INCLUDING INSECTS.---NO. I.

BY I. B. HARTWELL.

However it may be in other sections and other countries, in New England we suffer but little from the depredations of the larger wild animals, while some of the small vertebrates, especially the rodents, are quite troublesome; and that class of the articulates called insects, are yearly making such insiduous and extensive inroads upon vegetation as to excite alarm lest these implacable and uncompromising foes shall at length become our conquerors and masters.

We find in a late number of the New England Farmer, the statement, "that $300,000,000 a year will not cover the damage done to farmers in this country, by insects alone."

But before speaking more particularly of obnoxious insects, we have a word for the rodents; and because in the Norway rat, *Mus Decumanus*, culminates all the villanies of his

genus and order, we will take him for the principal subject of our first two numbers.

If a civilized, merciful and Christian man can possibly have an enemy so detestable and vicious that he would be justified in seeking to destroy him by the aid of cats, dogs, weasels and ferrets; by all kinds of traps and snares; by poison, by fire and water, by starvation, fright and torture; such an enemy must be found in the rat family.

Yet in fairness, it should be admitted that this rodent is not thus obnoxious to man's extreme displeasure, simply because he is a sneak-thief, murderer, and *rat cannible;* but chiefly because he preys upon and defiles the stores which man has hoarded for his own special use.

And it may also be said in behalf of the rat, that he is a thief from necessity; for were he ever so much inclined to pursue an inoffensive course of life, and to earn his subsistence by honest and honorable toil, all avenues to such a course are to him effectually closed. And he seems to understand and accept the situation, well knowing and fearing the impending penalty for his acts, and ambitious in nothing but the attainment of a bad eminence in his profession. We do not know whether he ever repines at his lot, or presumptuously inquires why he was made a rat, and not rather some more favored animal. If so, we advise him to read Pope:—

"Then in the scale of life and sense 'tis plain
There must be, somewhere, such a link as *rat.*"

But perhaps it is a question more interesting to man than rat, why there must be such a link in the "vast chain of being." While we are in no doubt as to the wisdom and benevolence of the Creator of all things, our knowledge of the various dependencies and relations of the countless forms of animal and vegetable life, is too limited to enable us to comprehend clearly the necessity or utility of many of these forms. A very common solution of the question before us is, that vermin are given for our discipline, by calling into exercise our ingenuity for their destruction, or our patience in enduring their depredations. Perhaps some may think that they are consequent to man's fallen condition, and should be incitements to the "seeking of a better country" free from moths. Without criticizing too severely the above solution, we may be allowed to say that any view of the animal world which restricts it to the use, advantage or disadvantage of man, must be extremely narrow and selfish. If we may believe the records of geology, the republic of animals was large and prosperous before the introduction and reign of man. And before we can approach a true solution of the question, we must admit that animals as well as men have some rights which we are bound to respect; and that animal life and enjoyment, irrespective of man, is of some little importance in the economy of nature.

But since many species and even whole genera of animals, from time to time in the past ages, and some indeed within the historic period, have become extinct without any sensible disturbance of the balance of power, or apparent shock to the great animal fabric, perhaps we may safely proceed to exterminate one or two species of vermin by way of experiment. And as the Norway rat is an interloper, having come to America about 1775, we may the more properly take him as the first example. But "*Facilis descensus—sed revocare gradum hoc opus, hic labor est.*" His introduction was easy—to exterminate him is a hard job; and will probably never be attempted on any plan sufficiently comprehensive to be successful. And therefore rats and men must submit to live together as best they can, hating and being hated. But if these detestable gnawers cannot be utterly destroyed, they may be diminished, partially excluded or frightened away, and compelled to change their base. And this brings us to a more practical consideration of the subject, which will be pursued in our next number.

Wilkinsonville, Mass., 1867.

For the New England Farmer.

AMOUNT OF SEED FOR POTATOES.

Having become convinced by repeated experiments that one can obtain more bushels and better sized potatoes by planting the butts of large potatoes than other descriptions of seed, I tried an experiment last year, with a few hills, to ascertain the quantity of seed necessary to a hill. The result was in favor of a much more liberal seeding than is commonly practiced.

To put the matter beyond all reasonable doubt, I have this year tried an experiment on a more extensive scale. I planted 780 hills as follows:—Commencing at one end, in the first row, I put 3 butts in a hill, in the second row 4 butts in a hill, and so on through the piece. Every odd row had 3 butts in a hill; every even row had 4 butts in a hill. I dug each row separately and weighed the product. The result was:—

390 hills with 3 butts yielded 1401 lbs. 14 oz.
390 hills with 4 butts yielded 1569 lbs. 15 oz.

This would leave a gain of 17 1-3 bushels per acre by planting 4 butts in a hill instead of 3. Take out 10 bushels for the extra seed, and it leaves 7 1-3 bushels clear gain over and above the extra seed.

After finishing my other planting, having a pile of mud on hand, for which I had no immediate use, I leveled it down, putting it in an oblong square form, leaving the mud about 18 inches deep. Here I planted 12 rows, with 6 hills in a row. From necessity I planted smaller potatoes, 5 being about equal to 4 of the others. Here every odd row had 4 butts in a hill, and every even row had 5 butts in a hill. On digging,

36 hills with 4 butts in a hill yielded 125 lbs. 4 oz.
36 hills with 5 butts in a hill yielded 136 lbs. 12 oz.

This would leave a gain, per acre, by planting 5 butts in a hill instead of 4, of 25 1-2 bushels. Take out 8 bushels for the extra seed, and it leaves, omitting fractions, 17 1-2 bushels clear gain over and above the extra seed.

The way I account for the discrepancy between these experiments is this:—In my first experiment I commenced planting at the best end of the field; and consequently as we approached the other end, which was poorer, the odd rows were on better soil than the even rows. Had I commenced at the other end the result would doubtless have been more in favor of heavy seeding. Inequality of soil is a great obstacle in the way of trying accurate experiments. In my second experiment, as I used no manure with the mud, this obstacle was avoided.

The only valid objection which can be brought against such heavy seeding as these experiments indicate is, that the more seed you put in a hill the smaller will be the potatoes. Whether this objection outweighs the advantage of a larger product, each one must decide for himself. I think I had as many good sized eating potatoes from 4 butts to a hill as from 3; so that the extra product was clear gain, if the gain was in small potatoes.

Sprouts or Eyes.

I wish to say a word about the impropriety of planting small potatoes, or large ones cut in small pieces. The root of the potato sprout or eye extends to the center of the tuber. Sever the sprout or eye from its root, and you lessen its vigor. In proof of this, pare off the outside of the potato to the depth of one-eighth of an inch, and the inside, if planted, will commonly grow, but it will grow feebly. Plant the paring and it will grow feebly, just in proportion to its thinness. Cut a potato as you will; the smaller the piece, the more feebly it will grow. As to planting small potatoes it is contrary to all analogy. When farmers winnowed their wheat in the wind, they kept the butt of the heap for seed. Gardeners always prefer the middle head of the parsnip for seed. Thus with all kinds of seeds; the largest, most perfect and best ripened are always preferred. Should one go counter to the common practice in selecting seeds, his sanity would at once be called in question. Why, then, should potatoes be an exception to this universal rule?

Derry, N. H., Jan. 1867. E. B.

For the New England Farmer.

A PLEA FOR THE BIDDIES.

Mr. Editor:—I am right glad to see the pleasant cover of The Monthly Farmer once more. I have greatly missed its visits for two or three years past. True, I have had the weekly Farmer, but that is not in a proper form for occasional reference or for binding. It is only a newspaper; and, at the week's end, like all newspapers, it is common property as wrapping paper.

But your Monthly collects that which is most valuable in the weekly; gives it to us in pamphlet form, which says, "hands off" to the destroyer. And, at the end of each year, we can have a volume for reference which is worth a dozen times what it costs. Few books in my house are consulted oftener than some old volumes of The Monthly Farmer. If those who cultivate the soil were not blind to their own interest you would print a larger edition than you do. But we must wait and hope.

And now, having paid you what I really feel to be a well deserved compliment, I want to point out what I think is a glaring inconsistency in your January number. On page 10 you say:

> The Poultry.—This branch of farm stock probably pays more for the money invested than any other. Treat the poultry fairly and the poultry will treat you to flesh and eggs accordingly.

All that is strictly true; but on page 26 I read the following:

> The great profits which are occasionally realized on a few fowls induce many people to think of extending the business. Frequent inquiries are made for our opinion as to the expediency of engaging in the business on a large scale. From our observation and reading we have felt obliged to advise against all such enterprises.

Now, Mr. Editor, are both these paragraphs true? Is it, indeed, a fact that a few fowls are very profitable to a farmer, but, when the number is increased, the business becomes unprofitable? For one, I am not ready to accept the theory or admit the fact. It is a well settled principle that one can feed ten cattle or ten sheep proportionately cheaper than we can one; that we can cultivate ten acres of corn, or cut ten acres of hay or grain, at a less rate than one. Why does n't the same rule apply, at least in some degree, to the poultry yard?

When I went to school—the old square brick house, you know; inverted mill-hopper for a roof; brick floor; seats around the walls like a morris-board, it took me some time to master the rule of which these signs are the representative, : : : : But, once mastered, I never forgot it. And I aver that as ten fowls, well kept, *is to* "pay better than any other branch of farm stock," *so is* a hundred fowls equally as well kept *to* ten times as much profit.

I don't say that I am not wrong in this, but if I am, will some one please to tell *why?* It is no argument to say that all attempts to raise poultry on a large scale have been, so far, failures. Further on, in this very January number you quote from a Rhode Island paper which tells us that, "Mr. A. C. Vose, near Manville, has enclosed an acre and a quarter of land with a high fence; and in this enclosure he keeps about a hundred and fifty hens. During nine months of the year these fowls gave a net profit of two dollars a day, or five hundred dollars a year."

If this story is true, why could n't Mr. Vose

enclose *another* acre and a quarter of land with a high fence, stock it with fowls, and reap *four* dollars a day instead of two? Or, why could he not have *ten* such lots with a like increased income, if he was careful that all his stock was *equally well kept?*

I ask these questions earnestly hoping that some one will enlighten us on the subject. Eggs have averaged three cents each in our market for a year past, and how much higher they will go unless some one *does* go to raising poultry on an extended scale, no one can tell. At any rate, I desire that our Farmer shall be a *leader* in all good works. If one falls down in the race, let him be picked up, the dust brushed off, a few words of encouragement given and the runner set on his way again. Depend upon it, it is a great deal better than telling him he is a bad boy and must run directly home, unless you can show him plainly and conclusively that what he is running for cannot be reached. When I see that such is indeed the fact, I shall be ready to give in; but I am not ready to throw over my feathered friends as impracticable just yet. Idex.

CULTIVATION OF HOPS.

The high prices which hops now command will induce many to engage in the business. Without practical experience in the art of growing or curing them, the cultivator should proceed cautiously. No sort of produce probably has fluctuated in price like the hop. This year they are 50 cents or more per pound; and in a year or two, judging from the past, they may be worth only from 5 to 10 cents. Of late, too, insect depredation has proved most disastrous in many sections.

We copy from the *Rural New Yorker* the following article, written by Mr. J. M. Weller, of Wayne county, N. Y., in reply to questions which had been asked by another correspondent:—

"1st. How far apart should the hills be planted? Ans. Seven feet one way and eight the other, without regard to cheapness of land. 2d. I would not plant the corn rows near the rows of hops, and would alternate the hills by leaving out the corn where the hop roots are planted. 3d. I would advise flat culture instead of hilling. 4th. How many poles to a hill? Two. 5th. How long should they be? From 18 to 22 feet. 6th. How many vines to a pole? Two.

I will give a little more advice than is asked or called for, with regard to the roots and planting. The roots or seed, are last year's runners; they should be cut five or six inches long; three pieces to a hill; they should be cut so that the eyes, or buds, should be left on both ends of the roots. They should be planted about the same depth proper for potatoes, and should be dug early, before the buds on the roots start, put in a cellar and kept there until you are ready to plant your corn. Three bushels to the acre if the roots are good, are enough.

Another correspondent from Wisconsin sends the *Rural* the following on the same subjects: "Plant seven feet apart each way. I make no hills, but set a small stake 18 inches long to denote where the hill is. I have always planted potatoes and think it much better than corn for hops, the first season; plant the potatoes deep so as to avoid hilling as much as possible. I use a small cultivator, with three shovel teeth, the first season. Flat culture is the best for this section. My land is sandy, and we sometimes have droughts that injure the hops, if hilled. Set only one pole to the hill the second season, unless it is a very strong hill; then I set two. Afterwards set two, and to the strong hills three—leaving only two vines to a pole. My poles are from 16 to 20 feet long, but I think by observation, that poles from 12 to 16 feet are long enough. Cedar rails are best.

The growing is nothing to getting hops in good order for market. One-half, perhaps, of the hop crop does not command over one-half price in market, for the want of proper drying-houses and machinery for packing, and proper care in picking. Any neglect on the part of the hop grower in any of these things must result in loss."

Mr. L. H. Hansen, of Clifton, Va., an experienced hop-grower, informs the *Baltimore Farmer* that he plants hills at six feet distance.

"Holes two feet square and from *five* to *six* (?) feet deep were dug in the fall. Early in the spring the holes were filled with fresh horse and cow manure, about one foot and six inches from the bottom. On top of the manures the top soil was thrown, and about two feet of the hole left open for planting. Three weeks after the manure had been deposited in the hole, the hops were planted and surrounded by the *subsoil*, which, by exposure to the air, sun, frost and rain, through the winter, had lost its offensiveness to vegetation. In every hole *only one* plant. The first year the vines were tied to small poles, to enable the laborers to clean properly around the plants. The next year, and so on for every year, early in the spring, the dirt was removed from the main root, and *all* side roots cut off close to the main root, and the dirt then put back. As many of the wiltings as were required for next spring's planting, were put in ditches one foot deep, kept clean during the summer, and planted the next spring. On the head of the hop-root *only two* or *three* eyes were allowed to grow into vines, the balance nipped off, so that only one pole was required for every hill. These vines grew stronger, made more hops, and

twice as large fruits, (I have had them four inches long,) as any other hopvines I ever have seen. As soon as the vines have reached the top of the poles, about twelve feet, their heads are cut off by a knife tied to a long handle."

When a new hop-garden is formed in England, the ground is trenched, Mr. Stevens says, to the depth of two feet. Where labor is as dear as it is in New England, few farmers will dig holes six feet deep, or trench the whole surface to the depth of two feet. But all hop-growers agree in the importance of deep and thorough cultivation, and high manuring. Indeed the hop field, like the tobacco patch, claims the lion's share both of attention and manure, and gets it, too, where hop-growing is made profitable. The following directions as to the subsequent cultivation and kiln-drying were written for the NEW ENGLAND FARMER some five years ago by a correspondent who resided in Otsego county, the great hop-yard of New York:—

"The first year, they are cultivated like corn, no poles being set, and in the fall a shovelful of coarse manure is thrown on each hill, to keep them from freezing, and also to keep the land in good condition. The next spring the poles are set, two in each hill, as soon as they begin to show themselves out of the ground. The poles should be set very firm, to resist the winds, which exert a tremendous power on them when loaded with vines. Poles are generally cut eighteen to twenty feet long, which admits of their being sharpened two or three times if they rot off, as they always do in a few years. The land must be cultivated the same as for corn, keeping the weeds down, and hilling the hops up about the first of July, the same as corn. As soon as the hops are from two to four feet high, they must be tied to the poles with woolen yarn, putting two vines to the poles, and cutting off all others close to the ground. Nothing more is necessary until picking time, except to keep watch and fasten up vines that happen to fall down, and re-set the poles if any should happen to blow over. The picking is usually done by women and boys at about two cents per bushel. Boxes made of thin, light wood, and holding from twenty to thirty bushels are used to pick them in; four picking in a box, and having one man to pull the poles, cut off the vines, and lay them on the box. Large sacks are used to carry them to the kiln where they are dried before they are marketable.

"The size of the kiln must depend on the size of the yard. A yard of two acres would require a kiln about fourteen by sixteen feet, and twelve foot posts; the lower room, seven feet between joints, and lathed and plastered, so as to be perfectly tight, except overhead, where there should be floor timbers eighteen inches apart, and a floor of slats one and a quarter inches square, and laid one-half inch apart, and the whole covered with a kind of open cloth made for the purpose. On this floor the hops are spread from four to six inches deep, and a fire of charcoal made in the room below, and the temperature raised to about one hundred and twelve degrees. It usually takes about twelve hours to dry a kiln, they being stirred up every hour, and a teaspoonful of sulphur put on the fire about as often; the object of which is to bleach or whiten them. After being dried so that no moisture can be extracted by squeezing them between the thumb and finger, they are taken off and prepared in bales of one hundred and fifty to two hundred pounds, and sent to market."

AGRICULTURAL SCHOOLS.—Every farm and workshop ought to be a school where our sons and others can be taught to guide the plow and swing the scythe, and handle every tool in the most appropriate manner known to those skilled in their use. In the one, should be taught the nature of soils, the qualities and uses of manure, and all the minutiæ of the cultivator's art; in the other, the laws which govern mechanics should be studied, and the pupil should be instructed in all the mysteries of the mechanic arts. Thus, in both, should be taught all the various learning which goes to complete the farmer's and the mechanic's education for the practical duties of their calling.—*Mirror and Farmer.*

FOREIGN CLOTHING MATERIAL.

The statistics given in the December number of the report issued by the Department of Agriculture at Washington show enormous importations of clothing material for the year just past. The wool growers of the United States complain that under existing laws there is no inducement to continue in the business of growing wool. Prices have declined under foreign competition and excessive importations to a point where wool growing ceases to be remunerative, and hence must be abandoned unless some check be inaugurated to change the tide setting in against home fabrics manufactured from home material.

It would seem that a country as extensive as that of the United States, and with resources so abundant, ought to produce the raw material and manufacture out of it her own fabrics. The high rates paid by our people for cloths ought, in part, to go back to our farmers, who are able and willing to grow the raw material, instead of being distributed abroad among foreign producers.

The figures for eleven months of the past three years, furnished by the New York Custom House entries, indicate a reasonable cause

of alarm in reference to the future value and profits of labor. It will be seen that the excessive importations of the past year are enormous, and amount to more than $50,000,000 more than in 1864. The following are the figures referred to, showing the imports at New York for eleven months during the years 1864, 1865 and 1866 respectively:—*Ohio Farmer.*

	1864.	1865.	1866.
Manuf'tures of wool	$14,272,965	$7,409,031	$18,628,967
Man'f'tures of cotton	2,968,246	2,571,890	5,830,758
Manuf'tures of silk .	5,049,151	3,827,228	7,910,323
Manuf'tures of flax .	4,326,404	3,346,425	6,816,520
Miscell'ous dry goods	1,114,712	502,151	1,500,542
Total entered for warehousing	27,731,478	17,656,725	40,717,110
Add entered for consumption	42,299,707	63,729,422	79,516,014
Total entered at the port	70,031,185	$1,386,147	120,233,124

Vermont Sheep.—The correspondent of the Springfield, (Mass.) *Union*, has been visiting the sheep farms of Cornwall, Vt., and reports particulars. Henry F. Dean has a 300 acre farm, and 140 Spanish merino sheep, valued at $40,000 Hon. Rollin J. Jones has a farm of 600 acres. His flock numbers 125, valued at $40,000. F. H. Dean, 350 acres; 150 breeding ewes valued at $500 each—$75,000. Don't doubt it, for he has been offered $1000 each for five of them, and $7000 last year for a four-year old buck, which has since earned him $4000. California gold mines can't compare with that. Merrill Brigham, 400 acres; flock, 300 thorough-bred, valued at $51,000. Simon S. Rockwell has a flock of 300 valued at $30,000. One of his bucks has netted him over $20,000 in the last four years. Hon. Joel Randall, 500 acres, and 250 "of the best blooded sheep," value not stated. He sold a two-year old buck recently for $3000.

TANNING WOODCHUCK SKINS.

Seeing so many different ways for tanning furs, woodchuck skins, &c., I thought I would send you mine. I have tried various ways, and I think my way the least labor, and the furs tanned as well, if not better, than any I ever saw. I take the first premium on tanning at our County Fairs when I take any of them.

Woodchucks are best caught in winter or spring. In an open winter I have caught them every month but December. They come out very early in the spring, and it is very easy catching them—at least, I never had any trouble. Find where they come out, set the trap in the month of the hole, cover with leaves, and I am sure of a woodchuck the first time one comes out.

For tanning, salt the skins, roll up, and let them lie for four days in the salt; then take them and stretch, and let them dry straight and smooth. Then take an old shave or something similar, and a smooth board six inches wide to work on, and flesh the skin clean; then for each skin take of salt and pulverized alum one table spoonful, equal parts for each skin—dissolve the salt and alum in warm water just enough to wet the mixture—put it on the skins warm—roll up the skins, and let them lie from two to four weeks; then partially dry them; then take sand paper and rub them till dry, and they will be ready for use. There is oil enough in them to make them soft and pliable.

Woodchuck fur is nice plushed. It makes good trimming for children's caps and nice mittens, and does not cost one-fourth as much as yarn, and outwears them by half for mittens. I make the inside of the hands of the best fulled cloth I can find. It will outwear the best deerskin I ever saw, and is much warmer, and wetting and drying does not make them hard like deerskin. I have tried them both, and I want no more deerskin for me unless for chopping.—*A. W. W., in Country Gentleman.*

A Hint for the Boys.—I rejoice to say I am a farmer. Although young yet, I find I can keep up with my neighbors. I have always lived upon a farm: my father is a good farmer, and he has a nice little workshop, in which I first learned the use of tools. I can mend a plow, wagon, sleigh, or an ox-chain, sharpen and temper a crowbar, make a gate and hang it, mend harnesses, boots, shoes and tin pans, repair and clean a clock and watch, and on a pinch can wash, iron, and darn stockings. My apprenticeship was served in my father's farm-shop on rainy days where I spent my leisure time, instead of resorting to the village. This training has given me a love for home, with skill and ingenuity to keep things neat and in repair, and to make home attractive to myself and family.—*Highlander, in Rural American.*

Agriculture in France.—The *Journal de l' Agriculture* says:—"The agricultural statistics of France for 1866 are not very brilliant. The corn crop is below the average. Wine will be abundant, but of very ordinary quality. Potatoes are rotting in the storehouses; in many instances fears are entertained of not being able to preserve sufficient for the next planting. Olives will furnish a better crop than was expected. Tobacco is affected with the rot. Walnuts and chestnuts have produced the ordinary quantity. The disasters of the silkworm culture add darker shadows to the picture. The cider fruits offer a valuable resource, and several special crops, such as hemp and colza, have been good. There is, therefore, some compensation for the evil, and above all, hopes for the future."

The Fire-fly.—This is one of the most common and peculiar insects we have, and some of its species are well known and widely distributed throughout the United States. Here it is popularly known as the "lightning-bug," on account of their sudden and brilliant flashes

of light in the evening and on dark nights. They are also called glow worms. It belongs to the order *Coleoptera*, family *Lampyrdæ*. Our species of glow-worm, or fire-fly, is a beetle about a third of an inch long, wings of a brown black color margined with pale yellow and thorax light crimson. The outer wings are of a softer consistency than is found in most beetles. The larvæ is a soft black flat grub supposed to live in the ground in low swampy places. Those that we have observed emit the light at will from the top of the abdomen, on raising their wings. The females of some species which are wingless, are also said to possess the same power. This peculiarity of emitting light is probably done by the insect to attract its mate. Those of the Southern States are more luminous, and it is said one of them will emit sufficient light to enable a traveller to tell the hour of night by holding his watch near the insect.—*Me. Farmer.*

EXTRACTS AND REPLIES.

SHALL I PURCHASE A FARM?

Advice is wanted in the following case. Your opinion will decide it with me.

I live in the city, and desire to remove into the country, and engage in agricultural pursuits. I have enough to buy a farm, pay for it, and stock it, and not owe a dollar in the world, and have $10,000 at interest. Can I do it and get a living from any farm, with the interest from my $10,000, and not be obliged to draw upon my principal? Your opinion is sought for, as it will decide the question for me, and perhaps for many others.

The farm I propose to buy is within 20 miles of Boston, upon the railroad; there are 73 acres, buildings good. It keeps 11 cows, 1 yoke of oxen, 3 horses, 4 pigs, and the present owner appears to get along, though he don't hurt himself with work. There is a good bed of muck which has not been used much. The soil is good, and good judges say that the farm is well worth what it can be bought for.

Let me have your opinion, if you please, in the FARMER. I am a weekly reader of your paper.

Boston, Jan. 29, 1867. A. B.

REMARKS.—We have had many letters of a character similar to that of the above, and we can answer just as intelligently as our querist could answer us, if we should say—"We have $10,000 to invest in a dry goods store in Boston, and have $10,000 more as a working capital"—can we get a living from it, and not trench upon the principal? The farm you describe will support any family which has health and industry, and will practice a moderate frugality. There can be no doubt of it. If it were not so, the earth would not produce enough to sustain even a sparse population.

You do not state how much taste you have for agricultural employments, how much capital you have invested in your own skill for reclaiming the soil, and increasing its fertility when reclaimed; how much for cultivating fruits, increasing and composting manure heaps, selecting breeds, and purchasing and selling stock, and when the crops are produced, in getting them to market and securing profitable returns.

The points of more importance to you, and your family, than any you have mentioned in your letter, you have not touched upon.

Few persons, in any of the walks of life, make sadder business mistakes than those who have been occupied in, and led a city life. Many of them receive the common opinion that "any body can be a farmer," and this error, with a sanguine temperament, often leads them into unfortunate circumstances which are irretrievable, and cloud all their future life.

Farming is just as much a business that requires the prompt application of the powers of both mind and body, skill, industry and perseverance, as any other avocation in which men engage. Indeed, there is no other business, in our opinion, that requires *something of all the knowledge* taught among men, so much as that of agriculture and its kindred branches. Unlike other arts, it has few unvarying rules to govern its devotees, even in the manipulations of the soil. The same course that the farmer pursued last spring in getting his crops into the ground, may be inapplicable, in many respects, this spring. He is always surrounded, too, by hosts of depredators, (so he thinks,) who devote their lives to destroying the fruits of his labor. Frosts cut down his crops; droughts pinch them; how can he protect himself against these effects? Drenching rains, mildew, and blight, not only visit his fields but disease is there, too, and also cuts off his cattle in their stalls! How are all these to be prevented? Only by the extension of his knowledge, and to acquire this, every kind of information that is useful to any class, will be useful to him.

There are many other points that ought *first* to be considered, before dwelling upon the main inquiries of our correspondent. They are of a more personal and private nature. We could recite instances, and the circumstances attending them, enough to fill a page, where city gentlemen have sought our advice, but did not heed it, and heavy losses, disappointment and discouragement was the result. In one instance, more than $20,000 was sacrificed, and that loss was not so great as the loss of health and comfort which was attendant upon it. In other instances the losses have varied from $1000 to $10,000. The advice was too cheap. It seemed to have no value because it cost nothing. These errors are committed every week, and the money losses attendant upon them are little in comparison with the wounded pride, (laudable, perhaps,) blasted prospects, and the new and uncongenial mode of life that must for the future be pursued.

Some of the best farmers in New England are those who have spent most of their lives in the city. Men who spent their childhood and youth on the farm, who had decided tastes for rural employments, and who saw, heard and treasured up in

their minds every thing that took place about them. These were facts laid down as a basis, to be builded upon in all after life by reading, reflection, and an unceasing and acute observation. No wonder that they entered upon the farm with skill to manage their capital in the soil, and to set us excellent examples. Our correspondent, we trust, is one of this class.

"USE AND MISUSE OF BUCKS."

I read with much interest an article in your valuable paper from the pen of Dr. H. Boynton, of this State, upon the "Use and Misuse of Bucks."

With your permission I will give your readers my experience the past season. I kept forty-four ewe sheep, natives, with a slight sprinkling of South down and Leicester. I used with them a buck lamb which was a cross of the Hampshire Down and Leicester. I "tended the buck" by letting him among the sheep with a rope about his neck, with which to regulate him. I never allowed him to serve but two each day, and those but twice each. The buck was kept in the stable and fed with the best of hay, grain and roots, with plenty of water, which kept him strong and vigorous. About three weeks sufficed to serve the flock, when the buck was allowed to run with the sheep. Now for the result:

Two of the ewes had no lamb. The forty-two dropped fifty-five strong, healthy lambs, which required no extra attention, except a little feeding of some of the twins for a few days. The lambs began to come the first of April. I lost but one of said lambs, and that one was killed by a dog or fox in the pasture. I sold the fifty-four lambs in September, for two hundred and thirty-five dollars, which was better than flocks sold for in this town with no twins among them. The same sheep last year had but three sets of twins, while this year thirteen of them raised twenty-six lambs. I have managed my flocks the same this fall and shall note the result in the spring.

Jonathan Lawrence.

St. Johnsbury, Vt., Jan. 22, 1867.

P. S. I might have given my manner of feeding and caring for my sheep and lambs, but my article is already sufficiently lengthy for a new beginner. J. S.

Remarks.—Just about the right length. How much valuable matter can be put into a small space. Your direct and clear manner of expressing yourself will be urged by thousands of the readers of the Farmer as one of the reasons why you should give them your very successful "manner of feeding and caring for your sheep and lambs."

A NEST OF EGGS.

Messrs. Editors:—Enclosed I send you a sample of eggs, with the nest, as I found them on my apple trees, while pruning in November. Sometimes I found the remains of an insect in the nest with the eggs, sometimes the eggs alone, and sometimes the remains of the insect without the eggs. To what species do they belong? And are they injurious to the trees or fruit?

I also noticed many little cases about a quarter of an inch long, fastened to the under side of the limbs, some two or three inches apart, right in a line and always lengthwise of the branch, containing a very small worm. What are the habits of the creature in its other stages of development?

I have about one and one-half acres of orcharding, the greater part of which was set out some thirty-five years ago, and for the last twenty years has had about all done for it that I have seen recommended in the agricultural papers. Have grafted, pruned, plowed, scraped and washed the trees, but as yet have not received as much from the land as I should have done had it been laid to grass or planted with hoed crops.

The soil is loamy, resting on a subsoil of loose gravel; a portion of it sometimes suffers from drought, but never from moisture. There are about twenty varieties of apples in the orchard, embracing the earliest, latest, and medium fruits. The Sapsons and Greenings have made the best growth; the former being very prolific, the latter always bear many blossoms but little fruit, while the Pearmain's and Peck's Pleasant seem to be ordained for the woodpile, and were it not for the fact that I love apples dearly, a great portion of my orchard would be in that vicinity very soon.

Hebronville, Mass., Dec. 28, 1866. S. L. Read.

Remarks.—We have examined the parcel sent us, but no living thing in it could be found, although the eggs were broken and placed under a microscope of very high power. The eggs and cocoons are common, but we cannot make out their names from an examination of Harris' book.

We cannot account for the failure of your orchard; perhaps might upon seeing it. A neighbor of ours set 150 trees 18 years ago, on good sandy loam land, and has tended them well. They are thrifty, handsome trees—but he has not obtained fruit enough from them to supply a family of ten persons. We set as many trees at the same time, on a granite soil, have tended them well, and cropt the land heavily every year, and have gathered 200 barrels in a season. Why the difference? Who can tell? One is a granite soil, the other a rich, sandy loam. Ours is on high land, the neighbor's is on a level between hills and low land.

"YOUNG OLIVE PLANTS."

When the "Farmer" arrives, each one, as he takes the paper in hand, turns first to that part in which he or she is most interested. The farmer glances over the first page, turns to the prices current, &c., while the housekeeper will turn to the last page to read the receipts for cooking, &c., and the sentimental miss will go to the poet's corner.

Now I am not much interested in the hints about rearing and training colts or calves, but I have a small flock of bipeds as full of life and spirits and sound as young colts, and stand in need of as much training. They are real downright, noisy, boyish boys, direct descendants of old father Adam, and have the inherent craving which distinguished that particular ancestor, for *more apples*; consequently they are ready at all times for a raid upon the commissary department for supplies. As I have practiced cooking for some years, I find it much easier (when I have the materials,) to make their doughnuts and gingerbread than to make *them* docile and gentle, and much less trouble to make cakes and custards than to learn them carefulness and cleanliness. Their greatest ambition seems to be to slide down hill, skate, play ball, and have a good time generally, without regard to raiment, or the toil and care necessary to keep it whole and clean. As I said, they are troubled with no ambitious desire to become President or anything of that sort, but sometimes when their very particular wishes are crossed, they manifest a strong tendency to walk in the footsteps of that personage, by taking high steps, "swinging round

a circle," or rather a number of them; and if possessed of the power, would remove with a will all P. M.'s from office—which may mean, in their case, Post Masters or Poor Mammas; it makes but little difference, in that state of mind, which.

I will say no more of their propensities or habits now, but I shall look with eagerness for that part of "Domestic Economy" which treats of plants —especially "the young olive plants" which were in old times considered as blessed gifts to a poor man. Although it is getting to be very unfashionable to have a troop of boys, yet as there are some boys now, some hints from those who have been successful in this department of agriculture would no doubt be gratefully received by many others as well as myself.

I am *not* the Old Woman that lived in a shoe, but have so many children that I've enough to do. No doubt you think I'd better be doing it. M. R. C.

West Boxford, Mass., Feb., 1867.

GOOD PIGS ON COOKED FOOD.

I saw a statement in a late FARMER, of a pair of nice pigs fatted on uncooked food, in Derry, N. H. I will now give you a statement of a pair of pigs, fatted on half middlings, half Indian meal, with skim milk, cooked every time. The pigs were bought of Mr. William Pickering, one of my neighbors, July 3, 1866, at six weeks of age; one weighing 19 1-2 and the other 20 1-2 pounds. They were slaughtered Jan. 23, 1867, making them thirty-five weeks old. Weights, 331 and 315 pounds.

Wilmington, Mass., Feb. 3, 1867. J. A. AMES.

A BRAHMA COCK AND HIS LEGS.

I have a very fine Brahma cockerel which I value very highly, it being the only full-blooded fowl of the kind in this vicinity. He has very suddenly lost the use of his legs, or nearly so; he appears to be all right every other way, but his legs don't serve him. Will you, or some one else, please tell me through your columns, what ails him, and how to cure him? and oblige a subscriber.

F. H. LANDER.

North Auburn, Me., Jan. 28, 1867.

WHAT IS IT?

On opening a hog recently dressed, I found something resembling in shape and appearance, a flax seed, loosely attached to the fatty portion of the entrails. Sometimes several of them were connected together slightly by a sort of mucous, sometimes they were entirely distinct from each other, were varying in size, always retaining the same oval shape, pointed at one end, and were quite solid in substance. None have been discovered yet in the meat. Not having ever noticed them before in other hogs killed, I wish to inquire what they are, the cause, &c., &c. The hog was fed with corn on the ear until a few weeks past; its food has been meal scalded at each time of feeding, and then cooled to a milk warmth. G. B.

REMARKS.—Who can tell?

SCRATCHES ON HORSES.

I have a span of valuable black horses, which have the scratches so badly as to render them entirely unfit for use. Will you, or some of your correspondents, inform me, through the columns of the FARMER, of a reliable remedy and speedy cure? R. P. T.

Pittsburg, N. H., Feb. 3, 1867.

REMARKS.—If the disease is in its first stages—that is, has not ulcerated—wash the parts affected perfectly clean with castile soap and warm water; rub dry with the hand or warm flannel. Then, with a soft sponge, bathe freely with brine from the beef or pork barrel, three or four times in twenty-four hours. Exercise the animal, by walking him about, two or three times in the course of the day. Give but little grain, and that in the form of a mash; but green food when it can be had, such as grass, or roots, and especially carrots.

If the disease has assumed the *ulcerated* form, the hair must be cut off, and the parts cleansed as stated above. It is doubtful whether the brine would be efficacious in this case,—but it would be well to try it. If not, prepare a lotion as follows, and wash three times each day with it, viz:—

Chloride of zinc, one ounce.

Creosote, four ounces.

Strong solution of white oak bark, four quarts.

There is a tendency to this disease in some horses, so that on the slightest appearance of it, measures should be taken to prevent its progress. The hair about the ankles should remain there, certainly through the winter. "Cutting it away, and thereby exposing the heels to the operation of cold and of wet is no unfrequent cause of grease. In winter, when the legs most require warmth and protection, the heels are deprived of the cover which nature intended should protect them; and parts where the blood flows most tardily are laid bare to the effects of evaporation and frost." Dashing cold water on the legs of a horse, when he returns from his work, and then sending him to the stall, is a miserable practice. It suddenly chills the legs, which is considerably increased by the greater evaporation caused by wetting them. Wash the legs, if soiled, and rub them dry, before putting the horse into his stall. It will require a little time, but less than to lose the services of the animal while curing him of scratches.

CHANGING SEED.

We hear much about changing seed, especially potatoes; which, doubtless, is all very well. But I wish to know why it is not just as practicable for me to plant a certain field on my farm with potatoes which were raised on my own premises, say 50 rods from the field to be planted, as it is to go to my neighbors, across the way, about the same distance and purchase my seed?

I can readily see why I may not plant the same field annually with the product of the preceding year, but why I may not take the product of another field for seed, I acknowledge I fail to perceive.

Salisbury, Conn. W. J. PETTEE.

REMARKS.—We can see no harm in changing seed, provided we get that which is good. We have planted potatoes through a period of fifteen years, on the same farm, and on fields adjoining each other,—selecting small potatoes for seed,—and we can perceive no deterioration yet, either in size or quality. They are of the "Irish Cup," "Dover," or "Riley" variety,—the former being their true name.

In plants that "mix" freely, such as corn, squashes, &c., it is well to change, if we can procure pure seed. The idea that frequent changing

of seed is useful, is a popular one, and we should be glad if some of our correspondents would set forth the advantages to be gained from the practice.

CALOMEL AND SULPHUR FOR FRUIT TREES.

A Novel Method of Doctoring Fruit Trees.—A gentleman, of Rochester, was lately in Saratoga county, N. Y., and was there shown an apple tree in fine healthy condition which had been ill, subjected to treatment with calomel and thoroughly cured. This tree was afflicted with insects, which were destroying it and rendering it unproductive. A hole was bored in the body of the tree nearly through the sap, and two grains of calomel inserted. As soon as this calomel was taken up by the sap, the vermin on the tree died, and it began to bear fruit, and has done so for three years, to the entire satisfaction of the owner. Sulphur may be mixed with the calomel and produce a good effect. This is a fact worth knowing.

The above extract I cut from a Boston daily paper, some time ago. If you have not published it in the N. E. FARMER, will you do so in such a manner as to call out from the author or some other person who may be thoroughly posted in the matter, answers to the following questions: What time of the year was the "calomel" put in? What kind of vermin? Will it take a larger portion for a larger tree? How large in diameter was the tree? What effect would a larger portion have on the tree? Is the fruit affected by the calomel? Would the calomel have to be administered every year? If the calomel gave entire satisfaction, of what use can the sulphur be?

Caterpillars will be rather scarce in these parts next spring. They did not many of them go to seed, and I cannot find but few of their spawns on the trees, neither last autumn nor the present winter, —not one this year to twenty last year. A. C.

Stoughton, Mass., Jan. 28, 1867.

REMARKS.—We presume that the above extract has never been published in the FARMER, as, not having any faith in its efficacy, we should not be likely, of our own accord, to select it. We have heard of sulphur and other materials being used as above directed, with no beneficial effect. The failure may have been in consequence of the insolubility of the materials inserted, and we are not certain that calomel, being more soluble, may not physic away the insects, but we must repeat that we are incredulous as to its beneficial effects. Still we wish to have it tried. Medicines are injected into the circulating fluids of the animal system. We have heard it said that the mouth may be made sore by rubbing blue pills upon one's leg —and more scientific experiments may prove successful in salivating insects on leaves and fruit by inserting a pill into the trunk of our fruit trees. But then how is it about the sap cells or vessels? May not each bud have one of those little channels which the microscope shows to exist in wood, for its special and independent feeder—its exclusive line of communication and supply with that great store-house, the soil? If so, how many pills would a single tree require, to protect each leaf?

FARMERS' GIRLS.

We little maids, up here in the country, do not like to be treated with neglect, nor do we like that sort of notice which may be illustrated by such expressions as "I *should* think it was time to have something to eat," if our meals are not ready at the exact moment; even if the men folks have been hard at work. Could they not think of how much we have to do, and how willing we are to work to save hiring help, and reward our efforts by an occasional thank, or at least a smile? It is true that farmers must work hard to provide for their families, but are not their wives, daughters, and sisters willing to help them by every means in their power? Then show us that our efforts are appreciated, by those little acts of kindness which are far dearer to us than the most costly gifts. These remarks are not prompted by a spirit of dissatisfaction with my home or my position in life. I am a farmer's daughter, and expect some time to be a farmer's ——. But no matter, for, at present—

I am a wild and laughing girl, just turned of sweet seventeen,
As full of mischief and of fun as ever you have seen;
And when I am a woman grown, no city beau for me,
If e'er I marry in my life, a farmer's wife I'll be.

I love a country life; I love the joyous breeze;
I love to hear the singing birds among the lofty trees,
The lowing herds, the bleating flocks make music sweet for me;
If e'er I marry in my life, a farmer's wife I'll be.

I love to see the chickens skip, I love to milk the cows,
I love to hear the farmer's boys a whistling at their ploughs;
And fields of corn and waving grain are pleasant sights to me;
If e'er I marry in my life, a farmer's wife I'll be.

I love to see the orchards where the golden apples grow;
I love to walk in meadows where so bright the streamlets flow;
And flowery banks and shady woods have many charms for me;
If e'er I marry in my life, a farmer's wife I'll be.

Let other girls, who love it best, enjoy the gloomy town,
'Mid dusky walls and dusty streets to ramble up and down;
But flowery banks, and shady woods and sunny skies for me;
If e'er I marry in my life, a farmer's wife I'll be.

—But at the same time I do often feel that my efforts to please do not always secure those evidences of kindness which they deserve.

———, *Feb.* 5, 1867. C. D. M.

SOWING WHEAT.

Can you, or the many readers of the FARMER, inform me whether you have ever known a case of sowing winter wheat in the spring, early enough to have it freeze, and thaw, before it comes up? I intend to sow a small piece, in March, or the first of April, to see what it will do. I think I shall take part of the wheat, wet it and let it freeze, then let it dry, then sow it; and sow a part of the wheat on the land, and let it freeze and thaw there, and grow at its leisure. Fifteen years ago, the middle of March next, I sowed a piece of winter rye, part of it on the snow bank, and when it was time to sow spring rye, I dredged it in. I had a good crop of winter rye. If the wheat does well, you may expect to hear from me next summer.

Essex Junction, Vt., Feb. 7, 1867. H. GRIFFIN.

REMARKS.—The idea is new to us. We have heard of sowing spring wheat very late in the fall. Keep us informed, whether the wheat does well or ill.

SOIL, MANURE, ETC., FOR MELONS AND SQUASHES.

Will "A. G. C.," Lee, N. H., have the kindness to state, in the NEW ENGLAND FARMER, the kind of land necessary for raising watermelons and winter squashes, the best kind of seed, and the parts

of manure in making the compost of night soil, charcoal, dust, plaster, and muck? In a short time I will give my experience in raising garden vegetables, and how to have a good garden.

North Oxford, Mass., Feb. 5, 1867. F. W. C.

AGRICULTURAL ITEMS.

—Pig's gall is said to be an excellent application for burns.

—Bees naturally cluster below their stores, and the heat ascending keeps the honey from freezing.

—It is stated that two-thirds of the manufacturing enterprises of the State of New York are conducted in and about the city of New York.

—In Champaign Co., Ill., corn stooked last fall is worth 25 cents per bushel in the field for feeding cattle.

—The *Mirror and Farmer* is credibly informed that over forty tons of maple sugar were made in the town of Warren, Grafton Co., N. H., last spring.

—The next fair of the Illinois State Agricultural Society is to be held in Quincy, commencing Sept. 23.

—I. H. M. Cochran, of Craftsbury, Vt., raised 52 bushels of good wheat from two bushels of seed sown on one acre and a quarter of land.

—Alvin Wilkins, of Stowe, Vt., has a pair of steers which when less than twenty months old weighed 2,500 pounds.

—That great English experimenter, Mr. Lawes, states that 500 pounds of barley meal, where it is made a sole feed for swine, will increase the weight of a pig from 100 to 200 pounds.

—The more honey bees have on hand in March and April, the faster they will rear young bees, and the more workers will be ready to gather the harvest from fruit blossoms.

—Salve made of linseed oil one pint; rosin three ounces; beeswax three ounces, melted and well mixed, is as good as any ever sold at 25 cts. per box.

—During the first week in January the mercury sank below zero in several places in Middlesex Co., England; sinking to 9° below on the Cotswold hills, Jan. 4th.

—The London *Agricultural Gazette* says that the attendance upon the exhibitions of the local agricultural societies of that country is constantly decreasing.

—L. S. Tucker, Esq., of South Royalton, Vt., who in years past has done so much to improve the horses in his section of the State, has recently bought a flock of twenty-five thorough-bred sheep.

—It is said that the vetch, a kind of pea extensively raised in England, and considerably in Canada, is indigenous and of extreme luxuriance in the territory of the Northwest.

—The abortive cow disease seems to be extending in the dairy districts in Central New York. At a late meeting of the Little Falls Farmers Club, the propriety of adopting some such stringent measures as crushed out the pleuro pneumonia in Massachusetts, and the cattle plague in England, was strongly advocated.

—The Franklin County, Vt., agricultural society at their annual meeting at Sheldon, elected R. J. Saxe, president; L. H. Hapgood, secretary, and W. S. Green, treasurer, all of Sheldon, for the ensuing year.

—The number of new cases of the cattle plague in England during the four weeks in December were, respectively, 14, 7, 6, and 9. These were nearly all slaughtered, together with 118 healthy ones which had been exposed.

—We learn from the Portland papers that at a meeting of the Trustees of the Agricultural College, Hon. Phineas Barnes of that city was elected President of the College, and his salary was by vote fixed at $3000 per year.

—No inconsiderable portion of the *Ohio Farmer* is devoted to notices of the organization of new County Wool Growers' Associations and the meetings of old ones. Farmers in Maine and elsewhere are also astir as never before.

—A Hampton Falls, N. H., correspondent of the *Country Gentleman* says, "Our farmers will not use anything dug from the salt marshes, when fresh mud can be obtained, considering the latter much more valuable."

—The *Country Gentleman* notices the importation of a lot of English Lincoln sheep, by Samuel Campbell, New York Mills. They were thirty-five days on the voyage, and ten ewes were lost. Fifteen ewes and two rams survive and are now thriving finely.

—After a discussion by the New York Farmers' Club on the best means to prevent the ravages of mice, the chairman, Alderman Eli, summed up the arguments by remarking, "It seems, then, that the remedy for domestic vermin is, to be surrounded with rattlesnakes, black snakes, and garter snakes."

—The New Orleans *Times* says that the sugar crop of Louisiana this year will reach 50,000 hogsheads, against 16,000 last year; that only extraordinary obstacles will prevent a production of 100,000 next year, and that the old average of 450,000 hogsheads will be restored in three years.

—An Indiana farmer uses poles instead of tile for draining, by splitting them through the middle, then start the heart with a gouge, and take it completely out with a tool made like a bent drawing knife. Two halves are then nailed together with sixpenny nails, when with a tool made like a huge pencil-sharpener the ends are worked off so as to fit each other. Joints need not be tight.

—Mr. A. Townsend, Oconomowoc, Wis., informs the New York Farmer's Club that his Delaware grapes bear in 16 months from starting the vines or layers. He layers the ripe wood of the last sea-

son's growth in boxes made of lath, so open that the roots pass through the sides and bottom. In the fall or spring he removes them to the vineyard, and has fruit the next September.

—In reply to the remark of some one that wild grapes which run on living trees are vigorous and healthy on hillside and swamp, all over the country, a correspondent of the *Rural World* says that in scores, perhaps hundreds of rambles in the woods, during the past fifteen years in Missouri, he has found the grape partially or completely rotted on the trees, alike in the vicinity of cultivated fields and in the depths of the "grand old forest."

A Jersey Cow.—A thorough bred Jersey cow, belonging to Mr. Daniel S. Brown, of West Cambridge, Mass., though three months less than six years old, had added six calves, all heifers, to her owner's stock—the two last, her only twins, being now several weeks old, are at her side. Last year she calved in February. Beginning in June, her milk was kept separate, a week or two, occasionally, for four months, and her average product of butter, at that length of time after calving, was found to amonnt to 9 1-2 lbs. per week. Her keeping was simply pasture feed. No meal nor messes of any kind were given to her, excepting the usual corn stalks when the grass failed in the latter part of the season.

The Concord Grape. It will be remembered that the prize of $100 offered by the Hon. Horace Greeley for the best grape for general cultivation was awarded to the Concord. This decision was recently under discussion by the New York Farmers' Club, when Mr. Nichols said, "I have 40 varieties, and I find that my family will pick the Concord first." Mr. Cummins—"I have a similar experience. While there are nice grapes in my hot house, my family pick Concords for choice." Mr. Dodge—"Of 18 choice bearing varieties, I prefer the Concord." Mr. Meeker—"In the warmer parts of the country the Concord rises in quality and is highly prized."

The quality of Wool is tested by taking a lock from the sheep's back, and placing it on a surface representing an inch in length. If the spirals count from thirty to thirty-three in that space, the wool is equal to the finest "Electoral" or Saxony wool. The staple is inferior accordingly as it takes a lesser number to fill up the same space.

THE JAPAN LILY.

In the weekly New England Farmer of April 7th, 1866, we gave a cut of the flower of this magnificent Lily. We have now the pleasure of showing a plant growing in a pot. As the name imports, it was introduced from Japan, and proves to be hardy, and a great acquisition to the garden. The propagation is simple and certain. Mr. Breck, in his Book of Flowers, endorses the following directions for their cultivation in pots, as represented in the cut:—

"I shall detail the practice I have pursued

with success for some years. Immediately when the bulbs go to rest, in the autumn, is the proper time to repot them. By no means destroy the old roots, but carefully place them amongst the fresh soil. If large examples, for particular display, are required, large pots may be employed, and half a dozen flowering bulbs placed in each pot. The soil I use is rough peat. The pots should be well drained, and the crown of the bulb just covered with the soil; when potted, they should be placed in a cold pit or frame, in order to prevent the soil from freezing, although frost will not injure the bulb. There is scarcely any plant which is so much benefited by liquid manure as the Lily. If used in a clear state, and considerably diluted, this water alone may be applied for at least a month before it comes into flower.

"If the object should be out-door cultivation entirely, I should recommend them to be planted in beds; their effect is exceedingly grand. Excavate the soil eighteen inches deep, and fill in the bottom, a foot deep, with very coarse peat, intermixed with one-fifth of decayed manure or leaf mould. The remaining six inches may be entirely peat. If the bulbs are large enough to bloom, plant them twelve inches apart every way.

"All our native Lilies are beautiful, and very much improved by cultivation. While we are bringing together, from the ends of the earth, the treasures of Flora, let not our own be neglected. These may be taken from our fields and meadows, when in bloom, by carefully taking them up with a ball of earth, and in a few years will richly repay the trouble."

Dwarf Pear Trees, Currant Bushes and Shrubbery.—These plants and many others need attention, now that the deep snows are settling about them. The snow softens around them on the surface in the day time, and as night approaches freezes again, but continues to settle below, and drags down he branches imbedded in it, and breaks them at their junction with the stem of the tree or bush.

At this time of writing, Feb. 8, the snow is sufficiently hard to bear up a man, and has already caused some destruction among pear trees and currant bushes. It settles more or less every day. It is already so compact as to require a stout spade to get it away. Delay will be dangerous in this particular.

FALL AND WINTER FEED, AND CARE OF SHEEP.

Sometimes injurious results arise from sudden *changes in food* in winter as well as in change of pasture. Sheep should not be kept out late in the season, exposed to the autumn rains and cold storms, with fleeces wet for a week at a time; nor in the winter when the weather is inclement. This absorbs the heat from their bodies, and uses up what little nutriment they get in the frost-bitten herbage. In such cases, the wool is left almost without support, a weak place remains in it so that the weight of the summer growth breaks it in two. Then the farmer *wonders what can make his sheep shed their wool so much!*

This may be fairly imputed to neglect in the fall. Feeding upon sour, frozen grass is apt to produce a relaxed state of the bowels, while a sudden change from such food to dry hay, is likely to induce constipation.

Sheds to protect the sheep from the storms of autumn, a few roots, and a little good hay once each day, would ensure healthier sheep, better lambs, better wool and heavier fleeces. Sheds are also necessary to protect sheep from the burning suns of summer. Rain, dews, and hot sun have an injurious effect upon wool. Wool contains a large amount of fixed oil, which the hot sun extracts and renders the wool harsh. To understand what this influence is, examine its effect upon a *black fleece.* When it first begins to grow, the top of the wool is as black as the bottom, but after being exposed to the sun a change in color takes place. It has parted with some valuable constituents. A similar effect takes place, too, when wool is exposed to a high temperature after being wet, whether on the sheep's back or being dried previous to manufacturing, or when made into garments. If an overcoat, after being wet, is submitted to a high temperature for the purpose of drying, it will be found to have changed its character—that the wool has become harsh and brittle, and that it will more easily tear than before.

After sheep are brought to their winter quarters, the treatment should be uniform and judicious. They should always be treated

kindly, so as to create a sympathy and confidence between flock and flock master. They should have a variety of nutritious food, be fed sparingly not wastefully, and what they do not eat, regularly taken away. Meadow hay, or poor hay of any kind, is the most expensive fodder the master can use, excepting occasionally as a change, and never any longer than while they eat it greedily. Fleeces of young ewes that have been badly kept will—after a winter of good treatment—gain a pound and a half, and the wool will be worth five or six cents more per pound than their former fleeces. Poor feed will not supply a sufficient amount of heat in cold weather to keep the body warm, so that nature comes to the assistance of the poor animal and starts fine fibres around the bottom of the wool, sometimes "cotting" it, as it is called, and at others producing what is termed "mess-bottomed" wool. In either case it is a serious injury to the wool, for the short fibres are of no use, while the true staple is short and weak.

Many experiments have been made with regard to the effects of *temperature* upon sheep. One by Lord Ducie says,—100 sheep were placed in a shed and ate 20 lbs. of Swedish turnips each, per day, whilst another 100 in the open air ate 25 lbs. each, and at that rate for a certain period. The former weighed 30 lbs. more than the latter, plainly showing that, to a certain extent, warmth is an equivalent for food. The wool on *those that gained* would be heaviest and superior in quality to that of the others. He also tried the following experiments:

Five sheep were fed in the open air between the 21st of November and 1st of December. They consumed 90 lbs. of food per day, the temperature being 46 degrees. At the end of this time they weighed 2 lbs. less than when first exposed. Another 5 sheep were placed under shelter and allowed to run—the temperature being 49 degrees. They consumed at first 82 lbs., then 70 lbs. per day, and increased in weight 32 lbs. Another 5 were placed in the same shed but not allowed any *exercise*. They ate at first 64 lbs. and increased 30 lbs. Another 5 were kept in the dark, quiet and covered, and ate 35 lbs. and increased 8 lbs

The deprivation of *exercise* is unnatural, and could not result favorably in the long run. As with other animals, it may be well for a short period, during the process of fattening, but always, probably, at the risk of the health of the animal. Sheep not only need exercise, but *perfect ventilation* in their apartments and never should be in crowded numbers. These experiments teach us that a moderate temperature, moderate feeding and exercise, pure air, plenty of light and water, with salt always at their command, are what is required to produce good wool, good lambs, and good mutton at small cost. When these essentials are faithfully observed, there will be little danger of disease affecting the flocks.

LETTER FROM THE FARM.

Short Horn Durham Cows, Alderneys, &c.

Gents.—The beautiful fields of last summer and autumn having put on their garment of white, to shelter themselves from rude winds and pinching frosts,—and to gather fresh sources of supply for the work they will be called on to commence in a few weeks more,—I have been compelled to seek instruction indoors. Sometimes this has been among books, then in social intercourse with thinking and observing minds, and again in looking upon the condition of those faithful animals who labor for us, and without whose aid our agricultural prosperity would be at an end.

So, weary of the pen and the books, and caring little for young floods and huge but wasting drifts, I have been about to see how my brother farmers are spending their time, and how their cattle look in their stalls.

My first call was upon Mr. Charles D. Tuttle, a young man "just returned from the war," to enter upon the more peaceful pursuits of a war against weeds and ancient prejudices. He was one of the first to spring into action when his country called, and was in that memorable march through Baltimore, which showed the enemies of our flag that it was still to be triumphant on every rood of our soil. He "fought the good fight," but, fortunately, returned to domestic life unharmed. There was still another battle, however, in which his skill was to be tested,—and one dreaded by many a brave fellow with more emotion than when shot and shell are flying,—in which, by judicious flanking and countermarching, he proved himself equally victorious! And now, on the old homestead, instead of one, there are two young hearts ready to

fight the battle of life on the field of Mars, or in the more peaceful and inviting fields of Ceres and Pomona.

I found that in his bays, Mr. Tuttle had deposited in the fall some 75 tons of fodder, 60 of which were English hay; and in his stalls were about 25 head of cattle, all of which were clean and in excellent flesh. Most of them were cows giving milk, and producing from five to thirteen or fourteen quarts per day, according to the time of having dropped their calves.

I was especially pleased to find among his stock, several *Short Horn Durham* grades, which promise to become very fine animals. There are no cows among us which possess, to my eye, so much beauty as a grade of the *Short Horn* and *Ayrshire*. In this mixture, the former loses something of its bulk, which is rather large for New England pastures, and gains in that delicate symmetry which distinguishes the Ayrshire; while the Ayrshire gains size, and, perhaps, milking qualities. The finest herds I have ever seen in dairy districts were made up from this mixture, and in some cases with what is called "native" cattle, in which Ayrshire blood was probably present. All about the barn indicated thrift and contentment.

The farm contains about 100 acres of excellent land. When Mr. T.'s father entered upon it, some 30 or more years ago, it produced but five or six tons of English hay. It now yields 60, and the proprietor thinks 100 tons may be cut annually by a higher course of cultivation.

My next visit was to the farm of Joseph L. Hurd, Esq., a native of this town, but now residing in Detroit. The farm is managed by his brother, Mr. William Hurd, and consists of 400 acres of every variety of land, from the deep bog to light, sandy loams. Some portions of it are covered heavily with wood and valuable timber.

In the revolutionary war, when the British were hovering on our coast or in actual possession of Boston, and vicinity, the buildings of Harvard College, at Cambridge, were vacated, and officers and students occupied the large house that then stood on this farm,—but which was destroyed by fire some ten years since.

For two or three years past a large flock of sheep has been kept on the farm, but having strong jumping and roving propensities, they were gradually sold off. There is now in the barns a stock of fifty-two head of cattle, including some five or six horses. Among the stock there are thirty-one head of pure *Jersey* or *Alderney* cattle, including two bulls, one four years old, and the other about one year old. A more beautiful sight has rarely been presented to the eye of those partial to this breed, than this stock in Mr. Hurd's stalls. He states that the cows are hardy and healthy; good feeders and milkers, docile in disposition, and probably the best butter makers in the world. They are nearly all of the fawn color, and almost as sleek and beautiful as fawns themselves.

Everything about the barn, cattle, fodder and implements, was neat and orderly. The whole stock has been fed—and will continue to be fed through the winter—upon meadow hay and shorts, as a large amount of that hay had accumulated in the barn. It was sweet, and the cows were eating it freely.

Upon this farm there is a vineyard of about four acres, mostly set with Concord grapes. I did not go to it, but understood that it is doing well. At another time I will speak of other farms. Truly yours, Simon Brown.

P. S.—Since visiting Mr. Hurd's farm, I understand that it is his intention to sell all his neat stock at auction in the course of a few weeks. There will then be a rare chance to obtain some of the finest Alderney stock that has been presented for a long time.

AGRICULTURAL COLLEGES.

A paragraph copied from the *Nation*, of which the following are the opening and closing sentences, has been copied by nearly all the agricultural press as well as by most newspapers of the country:—

"The work of organizing and starting so novel an institution is not to be done piecemeal and at odd hours. It must be the event of the life of him who accomplishes it, not an incident in his career. It must be his study, not his diversion. * * * The unity of purpose, the clearly defined plan of a single head, are far more likely to be successful than the conflicting plans and shifting methods of a dozen heads."

Col. S. D. Harris, editor of the *Ohio Farmer*, who in years past was connected with the Board of Education in Ohio, favors quite a dif-

ferent policy. From a statement of his views, in a late number of his paper, we copy the following:—

"The principles and practices of our normal schools and teachers' institutes, form the most rational and feasible basis for the commencement of the proposed agricultural college. This will include the two essentials of economic possibility and popular regard. In such an institution the machinery is not expensive nor the idea forbidding to common minds. It would also accommodate the exigencies of farm life, by allowing such boys to attend during the leisure season of winter, as could not well be spared during the summer; and in this way they would be like the bees which fly to and fro between the hive and pasture, bringing in the honey they gather and inciting others to a like adventure. Neither would this temporary attendance conflict with the higher privilege of such boys as could spend the entire year at the institution, for whom a more thorough course could be provided.

Let the boys feel that they are to enjoy facilities for learning how to become successful farmers, and do not frighten them by a grim show of Latin, Greek and mathematics. Organize your agricultural college upon this basis according to the means in hand, *and let it grow* according to its desert, instead of waiting for the splendid university to appear in all its unapproachable glory."

In connection with this the *Country Gentleman* alludes to the suggestions of the late Henry Colman, in reference to agricultural education, To secure 1st, "the thorough indoctrination of the pupil in natural science, and in mechanical philosophy, so far as it can be made to bear upon agriculture,"—and, 2d, a farm which should afford him "an example of the best management, and the best practices in husbandry," Mr. Colman recommends that the students should lodge and board with the farmer or others in the neighborhood, and that,

"One or two instructors should be employed constantly for teaching the main branches of education, and a competent farmer should be employed to manage the agricultural department, and to give the necessary practical instruction. Beyond this, no resident instructors would be required,—but regular and full courses of lectures and experiments in geology, mineralogy, botany, comparative anatomy, the veterinary art, and chemistry, by competent professors in these sciences, who might be employed for those objects annually, without the necessity and expense of constant residence,—as is now frequently done at our medical schools. In this way, the best talents in the community might be commanded, and at a reasonable expense."

With regard to instruction, he also throws out, as worthy of consideration, the idea of location near some established college which might afford additional facilities for scientific lectures or collections.

DELEGATES TO SOCIETIES.

At the late meeting of the Massachusetts Board of Agriculture, delegates to visit the Fairs of the various societies of the State were assigned as follows:—

Essex Society—Mr. Ward of Munson.
Middlesex—Mr. Thompson of Nantucket.
Middlesex South—Dr. Loring of Salem.
Middlesex North—Mr. Birnie of Springfield.
Worcester—Mr. Saltonstall of Newton.
Worcester West—Mr. Smith of Sunderland.
Worcester South—Mr. Davis of Plymouth.
Worcester Southeast—Mr. Porter of Hatfield.
Worcester North—Mr. Hyde of Lee.
Hampshire, Hamden and Franklin—Mr. Billings of Lunenburg.
Hampshire—Mr. Sanderson of Phillipston.
Highland—Mr. Slade of Somerset.
Hampden—Mr. Clement of Dracut.
Hampden East—Mr. Johnson of Framingham.
Franklin—Mr. Stockbridge of Hadley.
Berkshire—Mr. Bull of Concord.
Housatonic—Mr. King of Barnstable.
Hoosac Valley—Mr. Cleaveland of Tisbury.
Norfolk—Mr. Knowlton of Upton.
Bristol—Mr. Cole of Williamstown.
Bristol Central—Mr. Watkins of Hinsdale.
Plymouth—Mr. Hubbard of Brimfield.
Barnstable—Mr. Thatcher of Lee.
Nantucket—Mr. Ward of Shrewsbury.
Martha's Vineyard—Mr. Sewall of Medfield.

Rhode Island.—At a meeting of the Rhode Island Society for the Encouragement of Domestic Industry, at Providence, Feb. 6th, W. Sprague was elected President; Joseph H. Bourn, Cyrus B. Manchester, and Obadiah Brown, Vice Presidents; W. R. Staples, Providence, Secretary and Treasurer. A general exhibition, cattle show and fair during the year was decided upon.

For the New England Farmer.

THE WOOL TARIFF.

The intimations which for the last few weeks have been coming from Washington, in relation to new propositions for changes in the tariff upon wool and woolens, have been received by the farmers of the country with well grounded apprehension and alarm. The pith of these new recommendations is embodied in the following sentence. "No protection upon the raw materials of wool, coal and iron, but to award the protection of the government to those industries which require much skilled labor and large capital." In concise English,

this means precisely, protection for the manufacturers, but none for farmers. Old King Solomon was perhaps not far from right when he said there was nothing new under the sun; for these apparently new doctrines are simply a revised edition of the tariff of 1842, which was founded upon the principle of protection to manufacturers, so they might afford to pay a good price for wool. How high a price they did pay, wool growers very well remember, as under its beneficent operations wool depreciated in value from forty-seven to twenty-seven cents per pound, and to how low a figure it would have fallen, had not the tariff of 1846 taken its place, we can only conjecture. The fact is self-evident, that people, of whatever trade or profession, will buy where they can buy the cheapest, and sell in the best attainable market. Hence, if manufacturers can obtain their wool cheaper in South America than in New England, they will most assuredly do so; and our wool may lie in our wool rooms till the day of jubilee, which for farmers will probably very soon come.

With proper encouragement the farmers of the United States can raise all the wool which is needed for home consumption, instead of from one-half to three-fifths of a supply, as is now the case, and that interest which in the courtly language of our Washington dispatches, "requires much skilled labor and large capital" may be equally prosperous with us.

Another argument used is that if Texas or Missouri can raise wool at a profit at a very low figure, New England has no right to complain, and may quit the business. Grant this, ye most worthy high priests of free wool; but will you have the goodness to tell us whether, if by proper protective duties wool-growing is made moderately profitable in New England, the profits of Texas wool-growers would not be proportionally increased and the whole country thereby prosper together. In the years which are gone, I used sometimes to hear it threatened that New England, being extremely pestiferous, must be left out in the cold, but this is the first practical recommendation looking to that result, which has claimed the attention of Congress and the American people. Although the whole thing is too supremely ridiculous to be thought of without coleric ebullitions from one's inner man, yet, for the moment, let us examine these brave words about "skilled labor and large capital."

I confess that my perceptions are so obtuse that I am not able to see that it requires much more skill to tend a loom or spindle, than it does to carry along in order all the multifarious interests which center about the farm. "Large capital," too, forsooth! Didn't anybody ever stop to think, suppose, of the millions of farmers scattered over this country, owning from forty, to, perhaps, four thousand acres each, varying in price from fifteen to one hundred dollars per acre; its vast amount of teams and tools required to carry on all this business—little perhaps to each individual, but enormous in the aggregate. Then, too, our flocks of American Merinos and English mutton breeds, our herds of Durhams, of Devons, and of Alderneys, to say nothing of the vast value of other kinds of stock; and after looking this all over, will not people begin to think this interest also requires "much skilled labor and large capital," as well as others? We all know that the amount of capital employed in farming is immeasurably superior to that employed in any other avocation.

All we ask is equal protection with other industries, or failing in that, if we must have free trade in wool, let us also have free trade in cloths, so that in homely but emphatic language, all parties may understand that "sauce for the goose is sauce for the gander."

Cornish, N. H., Jan. 7, 1867. E. R. S.

For the New England Farmer.

NOXIOUS ANIMALS, INCLUDING INSECTS.---NO. II.

THE RAT.

The whole rat family, including mice, can be excluded from cellars and granaries, if the same are properly constructed; and no new ones should be built without being double proof against these vermin. Whether barns have been, or can be made secure in this respect, without too much inconvenience and expense, I do not know. If there is a happy man who has all his stores secure from depredations and defilement, let him tell us how the thing is done. In the meantime, before we can get our cellars and buildings in a safe condition, we will shoot, trap, poison and scare the rascals, to the utmost of our power and ingenuity. Most families employ one or more cats to aid in the extermination of rats and mice; but often, from want of neatness, cats are nearly as objectionable as the little animals they are expected to destroy, but do not. Rat flesh is not a favorite repast with Pussy, and she is not generally inclined to hunt the Norway very vigorously. We have discarded cats, partly on account of their offensive habits, partly because they have killed for us more chickens and birds than rats, and finally because a few good traps, well attended, will catch more mice than the best of cat-mousers. The best mouse trap is that very common one made of a disk of wood, with half a dozen holes in the periphery, in each of which is a wire-spring garrote.

Rats are exceedingly wary of traps: but by baiting them with meal in some partially dark nook, contiguous to a safe retreat, they will come out to feed in the day time, and by taking a concealed position with a shot gun, they can be laid out one or more at a time. And notwithstanding the reputed caution of Mr. Norway, the terrific explosion of the gun, the smell of burning gunpowder, and the sprinkled blood of the dead, the survivors will continue

to return to feed in the same place, till the last one is slain.

Once or twice a year our cellar is invaded by a *posse comitatus* of these rebels in grey. As soon as their entrance is known, I am after them with all imaginable devices of traps, one after another, seldom catching more than one in the same trap, until after the lapse of some weeks. A tilting cover, on which is sprinkled a little meal, over a barrel partly filled with water, has been my most successful trap, and many a rampant blade entering in anticipation of high feast and revelry, has found like Shakespeare's Ophelia, "too much water." Sometimes all the traps are insufficient, and poison must be employed. Parson & Co.'s preparation of phosphorus, or "vermin exterminator" will generally silence them; though I have recently had some visitors who refused this medicamentum, and would not leave till I fed them with arsenical bread and butter, not in the cellar, but in their retired walks about the outbuildings, where there was small danger of its being mingled with food of man or domestic animal.

It has been said that the oil of rhodium has, to rats, such a fascination and irresistible attraction, that by its use they may be induced to enter any sort of a trap or eat any medicated preparation. My experience does not verify the dictum. As to the various devices for frightening the rascally rodents away, few are reliable—none infallible; and when successful, only relieve us at the expense of our neighbors.

I. B. Hartwell.

Wilkinsonville, Mass., 1867.

For the New England Farmer.

ROTATION OF CROPS IN ENGLAND.

Having been requested by some of my neighbors to write to them again through the New England Farmer, I have thought that, as the smallest flower does not live to itself, but sends forth its fragrance and smiles upon every passer by, so it is the duty of every man to do all he can to benefit, cheer and encourage his fellow man, and to exercise feelings of gratitude that we are endowed with reasoning faculties, and possess the power to communicate one with another. If I can benefit any one with my limited ideas, I shall feel amply paid for my trouble in writing.

I have a number of "extracts" on file in my memory about the English farms and modes of farming, that may benefit some one in this country; but to be benefited we must lean one towards another, and give up our stiff-necked notions and prejudices. I have one thing to say, Mr. Editor, that since I came to this country, I have been greatly benefited by the ideas advanced by your numerous correspondents, and as long as I am able to pay for your paper, I shall not throw it up because you print "every body's ideas." I will say to my brother farmers, let our ideas be stated, no matter though rather vague. Some one may be benefited. But enough of this for the present.

I herewith send you a rotation of crops suitable for the different soils in England. Perhaps they may suit the soils in this country. If any one wishes to experiment upon them I should be glad to hear the result.

A variety of circumstances conspire to render the alternation of different crops an indispensable part of successful husbandry. Some crops appear to draw from the soil such liberal supplies of certain principles which can only be slowly restored to it again, that the soil is, with respect to such produce, exhausted; and the unintermitted succession of it would be unprofitable. Manure might renew the fertility of the soil, but it is interdicted by the expense of supplying the quantity required. A summer-fallow would prepare it for another crop, but this involves the expense of plowing while the land is unproductive. The most effectual means, therefore, of relieving a soil, and of obtaining from it the maximum produce, consists in a rotation of crops, which draw from the soil different principles, or different proportions of the same principles. Thus, white crops, viz: wheat, oats, &c., are extremely exhausting, but afterwards the soil will bear a good crop of beans, turnips, or tares. Probably the difference in the nourishment required by these fallow crops is far from being the whole advantage that results. The hoeing and harrowing they receive may enable the soil to replenish itself from the atmosphere, while their shade and the extirpation of weeds attending their culture prevents waste.

The following rotation of crops has been adopted by experienced agriculturists; but as time rolls on, change takes place, new experiments are tried, and new things take the place of the old.

Clay.	Clayey Loams.
1st yr., turnips or cabbages.	Turnips or cabbages.
2d " oats.	Oats.
3d " beans and clover.	Clover.
4th " wheat.	Wheat.
5th " turnips or cabbages.	Turnips or cabbages.
6th " oats.	Barley.
7th " beans or vetches.	Beans.
8th " wheat.	Wheat.
Rich and Sandy Loams.	**Rich and Sandy Loams.**
1st yr. turnips and potatoes.	Turnips.
2d " barley.	Barley.
3d " clover.	Clover.
4th " wheat.	Wheat.
5th " beans.	Potatoes.
6th " barley.	Barley.
7th " peas.	Peas.
8th " wheat.	Wheat.
Peat Earth.	**Light Land.**
1st year, turnips.	Turnips.
2d " barley.	Barley.
3d " clover.	Clover and rye grass.
4th " wheat.	Clover and rye grass.
5th " potatoes.	Clover and rye grass.
6th " barley.	Peas.
7th " peas.	Wheat or rye.
8th " wheat.	Wheat.

For soils that have a chalky substratum, and for gravels, the same course as above given for peat earth, is recommended.

If any one thinks of growing cabbages to any extent, I would say that he must be careful how he feeds them out; as if fed too liberally they give a very unpleasant flavor to beef, milk and butter. They are not cultivated so much as formerly,—turnips having succeeded them.

Such are some of the systems of rotation adopted in England. How far are they adapted to the soil and climate of this country?

EDW'D HEBB.

Jeffersonville, Vt., Dec. 17, 1866.

REMARKS.—Instead of one year, New England farmers generally allow something like five years out of eight, to grass crops. First, potatoes, then corn, seeding down with oats, rye or wheat, and five years to grass. Often, however, corn is planted first year, and the land seeded to grass the second. And of late the practice of inverting the sod in August, applying a little manure and seeding with grass, without any grain, appears to be gaining favor on many "grass farms." We thank Mr. Hebb for introducing the subject, and believe its discussion will prove instructive and of practical value.

WAGES OF FARM LABORERS.

In the report of the Commissioner of Agriculture, for the month of January, we find this subject treated at considerable length, and some interesting statistics embodied in the article, which is headed "The rate of wages of farm laborers in the United States," and is based on returns from every State and Territory and nearly every county in the United States. The returns from the Northern States are the most full and complete, but very general returns were received from the Southern States.

The method adopted to obtain this information was by sending circulars to officers of agricultural societies and others who could be relied on to collect the facts with accuracy and judgment, and the final statement, as made by the Commissioner, represents a summary of 1510 formal statements forwarded to him, and each one of these statements had been compiled from several others comprising portions of counties and districts.

The result of the inquiry shows a general and marked increase in the rate of wages paid farm laborers during the last thirty years. As compared with the rates of 1835, the increase has been 70 per cent., while the present rates show an increase of 50 per cent. over those of five years ago. The higher wages paid in this country, and the greater comfort and higher social position of the farm laborer, naturally attracted foreigners, and the greatly increased immigration, it has been feared would, through the competition introduced, lower the rate of wages. That this fear was unfounded is best shown by the fact that the demands for labor have more than kept pace with the supply. The present generation need not fear any overplus of laborers.

The present average rate of farm wages in this country is $28 per month for white laborers in the Northern and Western States, and $16 per month for freedmen at the South. In England the present rate of farm wages is $14 per month, and upon the Continent of Europe the rates are still less. The rates of wages in the several States differ just in proportion to the multiplication of separate industries, modified in new States in process of settlement by the increased demand for consumption occasioned temporarily by incoming settlers who are as yet non-producers, or in the mining States and territories by the employment of the majority in mining. The following is a table of average wages per month of farm laborers employed for the year in the different sections of the country:—

Eastern States . . .	$33 30	Southern States . .	$16 00
Middle States . . .	30 07	Oregon	35 75
Western States . .	28 91	California	45 71

The following table shows the average rate of wages paid per month for farm laborers in the several States and Territories. The first column shows the rate per month by the year, without board, and the second the rate with board:—

Maine . . .	$27 00	$17 44	Tennessee .	$19 00	$12 58
N. Hampshire	32 74	22 48	West Virginia	25 35	16 47
Vermont . . .	32 84	21 00	Kentucky . .	20 23	13 65
Massachusetts	38 94	22 36	Missouri . . .	26 75	18 08
Rhode Island	34 40	20 50	Illinois	28 04	18 72
Connecticut .	34 25	21 54	Indiana . . .	27 77	18 72
New York . .	29 57	19 32	Ohio	28 46	18 96
New Jersey .	32 27	18 98	Michigan . .	31 26	20 48
Pennsylvania	29 91	18 84	Wisconsin . .	30 84	19 87
Delaware . .	24 93	13 25	Minnesota . .	31 65	21 10
Maryland . .	20 36	12 76	Iowa	28 34	18 87
Virginia . . .	14 82	9 36	Kansas . . .	31 03	19 81
North Carolina	13 46	8 15	Nebraska Ter.	38 37	24 64
South Carolina	12 00	7 66	Utah Territory	44 71	26 32
Georgia . . .	15 51	9 67	Colorado Ter.	67 50	42 12
Florida . . .	18 00	12 12	New Mexico .	25 00	16 50
Alabama . . .	13 40	9 80	California . .	45 71	30 35
Mississippi .	16 72	11 58	Nevada . . .	75 00	60 00
Louisiana . .	20 50	12 42	Wash'n Ter.	52 25	36 25
Texas	19 00	12 72	Dakota . . .	30 20	20 00
Arkansas . .	24 21	15 80	Oregon . . .	35 75	22 53

In the East the cost of living, and in the West the scarcity of labor, has a tendency to

increase wages, yet in populous, central sections of the country, with easy communication by rail and water, the rates are nearly uniform, especially with board. The Territories, such as Nevada and Colorado, are of course exceptional, and show very high prices. And in the South the disturbed state of affairs, following the emancipation of the slaves, renders the rate of wages comparatively low.

In those States where regular labor is most general among the inhabitants, and where it is prosecuted in the greatest variety, laborers, as a rule, receive the highest wages. Massachusetts is given as an illustration. With a poor soil, and not properly an agricultural State, and with only 69,636 laborers in agricultural pursuits to 271,241 employed in mechanic arts, as the State census of 1865 shows, she pays higher monthly wages for farm labor than any other State except California, viz., $38.94 without board. This, it is argued, is the result of the great variety of labor in the State, bringing consumers and producers nearer together. Another cause of high rates of labor in this country is the superior intelligence and activity of the laboring classes.

The difference between wages without and with board varies quite regularly with the cost of staple articles of food; being higher East than West, and higher in the Territories than in the States. In the South, the food of the laborer consisting mostly of one or two articles, such as corn and bacon, the price of board is quite low. Thus in the Northern States the difference between the average of wages with board and without is $12.51 per month. In the Southern States, where the laborers are mostly freedmen, the difference is only $6.26 per month.

Tables are also given showing the rate of wages per day, and the average price paid in the different States for specific items of labor, such as harvesting and stacking wheat, hay, corn, etc. The same general result is attained as in the rate per month.

The rate of labor in Europe, as above remarked, is much less than in this country. In England the average income of a workingman is $5.62 per week, but farm laborers receive a little less than two-thirds as much, or on an average $3.50 per week. Allowing for holidays, etc., $168 is estimated as a year's earnings. In this country the farm laborer gets, on an average, $28 per month, or for eleven months $308, which, even in currency, will, dollar for dollar, buy more food than the English laborer's gold.

CHEMISTRY OF THE SEA.

Every number of the *Boston Journal of Chemistry and Pharmacy* contains notices of new discoveries in the arts and sciences, but especially in chemistry. The last number contained some wonderful statements made in regard to the color of the stars, their variable brightness, and their sudden appearance and disappearance in the heavens. Dr. James R. Nichols, Editor of the *Journal*, says that *chemists* are now studying the heavenly bodies with as much industry and zeal as astronomers, and that through the wonderful results of *spectrum analysis*, the chemical nature of the materials of which the stellar worlds are constructed, is beginning to be understood. From an editorial on the *Chemistry of the Sea*, we take the two interesting articles given below.

"Everything in nature certainly has some palpable use. It is no accident or casual circumstance that the sea contains large quantities of the lime and magnesia salts. What stupendous results flow from this soluble carbonate of lime! Without it where could shell-fish procure their coverings, or the coral polyps the material for their curious structures? The shell of the clam, the oyster, the snail, the lobster, etc., is composed almost wholly of carbonate of lime; from what source do the fish obtain their calcareous coverings? Young oysters in two or three years acquire a size suited to be used as an article of human food. The little gelatinous speck floating in the water at birth has through some channel obtained two or three ounces of solid stone armor in the short space of thirty or forty months. It had no power to chisel it from limestone cliffs, and they are not always found in the vicinity of calcareous deposits. It has absorbed or drawn it from the water in which it moves; no other source supplies it. How immense are the beds of shell-fish upon the shores of the ocean! what a vast concentration of the lime, once held in solution, is effected by these feeble creatures, ranked among the lowest in the order of animate creation!"

Iodine.—All *deep sea plants* are more or less rich in iodine;—[Iodine is used in medicine as an irritant.—Ed.] but the *Palmata digitata*, that leather-like and greasy weed, with long round stalk and wide branches, has it in greatest abundance. The Irish call it tangle or lieach, and it is found strewn along our shores in large quantities after storms. But even this holds but a very small quantity. Every ounce of iodine upon the shelves of the

apothecary has required at least *four hundred pounds* of weeds in its production. About thirty tons of the wet plants give one ton of *kelp*, as the incinerated mass is called, and from this nine or ten pounds of iodine is obtained. This would seem to involve a prodigious amount of labor and expense, bringing a high price upon the products. But the price is exceedingly moderate, seldom ranging in the English market above three dollars per pound. It would never pay at such prices to manufacture if the weeds did not yield other valuable products, as potash and soda. Without stopping to consider in detail the production of these salts, it may be interesting to know that probably more than *four thousand tons* of potash and *two thousand* of soda were introduced into the English market the past year, through the burning of sea-plants upon the coasts of Scotland and Ireland. The entire products of iodine from all sources must reach nearly or quite five hundred thousand pounds. How great is the industrial value of that which seems the most repulsive and worthless of all the products of nature! To what science are we indebted for opening up this great source of wealth? The reader's reply may be anticipated,—Chemistry.

LETTER FROM THE FARM.

"Truth is stranger than Fiction."

Those who go down to the sea in ships usually come back pretty deeply freighted with what are called "long yarns," and "fish stories," and astonish us with a rehearsal of the wonders of the great deep. But there are some things that take place on the dry land, equally as marvelous as that of "Jonah's swallowing the whale," or the "mermaid quietly combing her hair on the crest of a wave," one of which I will relate before I close.

Last week I gave you a few incidents of my winter travel at home, and now wish to say, that, extending my visits, I called at the farm of Mr. ELIJAH WOOD, of this town. He is well known as a persevering, money-making farmer, and an intelligent, liberal, and estimable man. His articles have added interest and value to your columns. Mr. WOOD is a practical and close manager. Wherever he labors upon the soil, he generally succeeds in making it yield him a fair remuneration. He has tested farming in nearly all of its varieties; in raising stock, as a principal interest; milk, in the same way; corn, as a leading crop, then potatoes or other root crops for market, and hay.

Last summer he sold $600 worth of hay, taking it from the field to his customers. He has had five horses and from twenty to *thirty-two* large oxen in his barn all winter, with fodder sufficient, at present, to carry them through. The fodder is good meadow-hay and cornstalks, butts and husks—the oxen feeding mainly upon the latter. Nearly all the cattle were in excellent flesh, some of them fair beef. He is testing this kind of farming for several reasons, which it is not necessary to mention here. He purchases manure, special or common, to an amount that he thinks would be nearly equivalent to what would come from the hay sold, if it were fed upon the farm. In addition to this, he has what comes from the fodder fed to the oxen, and one dollar a week per head, for keeping each of them. These oxen are intended for the spring market as working cattle. He intends to use six tons of superphosphate of lime the coming season.

Mr. WOOD'S barn is old and inconvenient. He is making preparations to build, or remove this one, and set it in the side-hill so as to drive into the gable, as his ground is admirably adapted to such a position.

One of the most remarkable circumstances that ever came to my knowledge was related to me by Mr. WOOD, with regard to one of the oxen. He had frequently noticed this animal rubbing his nose against a post near which he was tied, and occasionally an odor greeted his olfactories, not half so grateful as that which proceeds from a mow of good English hay. On giving careful attention he saw what appeared to be a small stick in one of the nostrils of the ox, and, after considerable effort, got hold of it with his thumb and finger, and drew out a stick *fifteen* (15) *inches* in length! It was about a quarter of an inch thick, and when laid even with the end of the nose, and alongside the cheek of the ox, reached above the eye! The ox continuing the rubbing, and some matter oozing from the nostril, Mr. WOOD procured assistance, and throwing a blanket over the head of the ox, as he stood in the stancheon, they proceeded to a minute examination, and extracted twelve (12) other sticks, not one of which was less than six (6) inches in length! One of these was a cornstalk 10 inches long and half an inch in diameter! Mr. WOOD'S statements were deliberately made in the presence of two or three persons, and, strange as the whole seems to be, we cannot doubt their entire correctness.

How they came there, or how long they had been there, is unknown. Some of the sticks have been preserved. The ox is in good flesh and is doing well.

WOOL-GROWING PROSPECTS.

At the late meeting of the Maine Board of Agriculture, Mr. Jefferds expressed the opinion that the time is not distant when a pound of wool will be produced cheaper than a pound of cotton ever was or ever can be, with paid labor; and consequently, that the keeping of sheep for the production of wool, primarily, cannot be profitably pursued for any length of time in Maine or New England; as the advantages of other sections of the country for wool-growing are far greater than our own, and wool is one of the most portable of all agricultural products. He believes, however, that our circumstances are favorable to the raising of mutton sheep and the wools that some of them produce. Our farms are small, and sheep are usually kept in small flocks; our pastures are rich (when not over stocked) and forage good. Though he would have farmers watch the signs of the times, and though he believes an increased tariff on wool will be only a temporary relief to the New England wool-grower, still he thinks we should not be discouraged in sheep husbandry, as mutton is the cheapest meat that can be raised, and the expense of transportation will always secure to us the mutton market without serious competition.

WENS ON CATTLE.

A correspondent inquires for a cure, without any particular description of their location or appearance. A few years ago Mr. Milton Smith, of Middlefield, Mass., cured a "Wen" as large as a hen's egg on the jaw of a three-year old steer by extracting an ulcerated tooth. A salve of soot, spirits of camphor, turpentine, and soft soap, in no very exact proportions, was recommended by J. W. Clark, of Wisconsin, in the *Country Gentleman* some time ago. Wens have also disappeared after the application of nitric acid and other caustics. Some years ago a correspondent of the Farmer said he cured wens by taking a tin cup, large enough to cover the wen, filling it about half full of unslaked lime, then nearly fill it up with soft soap, bind it on the wen tight, and tie up the animal so that it cannot lie down or rub off the cup, and in four or five hours the work is done. Some rub on a mixture of salt and tar, or soap and salt, while others have great faith in the efficacy of rubbing alone. On this subject an intelligent writer for the Albany *Cultivator* remarks:

In chronic swelling there is a deficiency of pure blood, ordinary natural circulation is obstructed or impeded, and foul matter, either from injured parts or active infection of disease, accumulates in larger or smaller masses. Now, if a wen or slow swelling be rubbed, the heat of it is increased by external friction and internal excitation, action. This increase of heat softens the induration, by causing a movement, and more or less interfusion of its fluid particles. By this means circulation is excited, and as whatever leads to arterial circulation leads equally to venous depuration, it follows, that as the arteries bring in new blood, and thus give new life and feeling to the part, the veins take away diseased and refuse matter, whether the result of collision or infection. Thus the cure proceeds as the circulation is increased, and restored; the veins taking away an excess of black foul blood, and thus reducing the swelling in the degree that the circulation is accelerated by rubbing; and when the circulation is completely restored, there is a cure. Thus does *rubbing* cure chronic swellings. J. W. C.

Some years ago, Mr. M. C. Peck, West Cornwall, Vt., sent us the following statement:

"One year ago last fall, I had a cow which, from all appearances had a wen growing on her neck; I at first administered a plaster of salt and tar, and drew it to a head, and in the spring I procured fresh green cicuta (cow-bane) leaves, and boiled them up and bathed the wen in the solution, leaving the leaves in; it wholly dried up in four weeks, so that she fatted sufficiently for beef. I have known others in this vicinity to cure them with the same remedy and keep them for years. Should you consider this of sufficient worth, you are at liberty to insert it in your valuable paper."

BREEDERS' ASSOCIATION.

We learn by the *Country Gentleman* that the Association of Breeders of Thorough-bred Neat Stock, had a meeting at Albany, N. Y., Feb. 14th, for the election of officers, and the result was as follows:

President—E. H. Hyde of Stafford, Ct.

Vice Presidents—J. F. Anderson, South Windham, Me.; J. O. Sheldon, Geneva, N. Y.; Burdett Loomis, Suffield, Ct.; J. W. Freeman, Troy, N. Y.; E. D. Pierce, East Providence, R. I.

Secretary—J. N. Bagg, West Springfield, Mass.

Treasurer—H. M. Sessions, So. Wilbraham, Mass.

Short Horn Pedigree Committee—S. W. Buffum, Winchester, N. H.; S. W. Bartlett, East Windsor, Ct.; P. Stedman, Chicopee, Mass.

Ayrshire and Hereford Committee—Geo. B. Loring, Salem, Mass.; H. S. Collins, Collinsville, Ct.; Wm. Birnie, Springfield, Mass.

Devon Committee—H. M. Sessions, South Wilbraham, Mass.; B. H. Andrew, Waterbury, Ct.; E. H. Hyde, Stafford, Ct.

Alderney Committee—John Brooks, Princeton, Mass.; O. B. Hadwin, Worcester, Mass.; James Thompson, Nantucket, Mass.

Adjourned to meet at Springfield, Mass., the second Wednesday of February next.

Ladies' Department.

DOMESTIC ECONOMY;

OR

HOW TO MAKE HOME PLEASANT.

BY ANNE G. HALE.

[Entered according to Act of Congress, in the year 1866, by R. P. Eaton & Co., in the Clerk's Office of the District Court for the District of Massachusetts.]

CHAPTER III.

HOUSE PLANTS, AND THEIR CULTURE.

The Begonia—called sometimes Beefsteak plant, from the peculiar appearance of the leaves of one species—is of easy culture, and has become a general favorite. The family takes its name from Michael Begon, a Frenchman, a promoter of botany, born in 1638. The plant was first brought into notice in 1776. Since then about fifty different species have been discovered, all of which are remarkable for their elegant leaves, often deeply veined with crimson, sometimes spotted—as *B. picta*, painted-leaved. The flowers, with the exception of two species bearing scarlet blossoms, are white, or blush-tinted, with golden stamens; and their delicate wax-like beauty contrasts well with the foliage. The plant is easily propagated by cuttings in moist sand. *B. discolor* increases itself by suckers, each having a tuberous root. Begonias should be grown in a soil composed of well-rotted leaves, sand, and peat; the pot filled one quarter with broken charcoal and pebbles, for drainage. They need a good deal of water till the flower-buds are formed; then decrease the quantity, and when they have done blooming keep them rather dry until the autumn.

The word Cactus, meaning prickly plant, comes from the Greek. This genus is usually leafless. The fleshy, succulent plants throw up stems which widen and flatten into a paddle-shape with coarsely notched edges; or they assume a globular, a jointed form, or that of an angular column;—sometimes the grotesque appearance of animals, or reptiles, all more or less studded with sharp prickles, and bristling with stinging hairs. The flowers are showy, many of them fragrant, also,—as the night-blooming cereus, one of the tribe. The cactus is indigenous to this continent; one species, *C. opuntia*, the prickly pear, is hardy enough to venture as far north as New England. But it is usually confined to the tropics, growing abundantly in Mexico, and Brazil, and affording the natives both food and drink in the dry season. The wild cattle, also, contrive to slake their thirst with its juices without wounding themselves with the thorns. The great melon thistle, or Turk's head cactus, resembles a large, fleshy, green melon with deep ribs, set all over with sharp thorns. In the centre rises a short pillar, from which the blossoms are produced. Specimens of this kind of cactus, more than two yards in circumference, and over a yard in height, have been seen clinging to the rocks in the West India islands. Travellers also mention one species of the plant, which, if torn, pours forth a fluid of the most poisonous character; but when carefully cut yields a wholesome refreshing beverage.

The cactus,—being subjected in its natural state to extreme moisture followed by extreme drought, when cultivated should be kept dry through the summer, yet not in the sun. Late in September begin to water it, giving it more sunshine, and more water gradually, until the flower-buds appear; you will see them in the notches of the edge, or at the end of a joint. If very closely budded, cut some out; those remaining will be handsomer than if all are suffered to bloom. Give it warm water, freely, till it is done blooming. Wash it well with a syringe every week. Apply liquid manure to the soil two or three times during the winter. The cactus is propagated by cuttings. Let the piece to be rooted remain in a dry cool place till it gets shrivelled a little. Then set it in wet sand and cover with a glass. When it looks full and thriving transplant to soil. The pot should be a quarter full with cinders. Upon this lay a compost of peat, sandy loam, and old plastering or mortar rubbish—if you cannot procure this last ingredient, burnt bones, coarsely pulverized, will answer;—there should be twice as much loam as of the other materials. This soil will need no changing for several years; and the pot may remain the same, as the cactus requires but little room for its roots. Among the handsomest, and also of easiest culture, may be mentioned *C. speciosissimus*—beautiful cactus—bearing a splendid orange scarlet flower, from which the stamens depend like an elegant white tassel. There

are also others having pink, white, and yellow blossoms, but, in general, the awkwardness of the plants prevent their introduction among parlor flowers.

Calceolaria, or Slipper-wort, from the form of its corolla. Chili and Peru abound in many fine species of this plant. It was first cultivated in 1773, and now the varieties and hybrids of the genus are almost innumerable. At first its blossom was of one color only—yellow; now, we have specimens of almost every shade and tint. The calceolaria is raised easiest from seed; but cuttings, first rooted in water and then kept from the sun a few weeks, do well. They should be started in May, in a soil of rich light loam mixed with peat and sand; a layer of broken crockery occupying the bottom of the pot. Give them plenty of sun and air after they begin to grow, and water freely. Tie the centre stem to a stout wire, and prune the side branches to make a symmetrical plant; or else train it to a frame. It is well to repot old calceolarias, every spring, and cut back the branches a few inches, in order to increase their strength. Keep them in an airy, cool place till September; then bring them forward gradually.

Calla Ethiopica: Arum, formerly, Aron, is supposed to be an Egyptian name by which this lily was known. It is a native of the Cape of Good Hope, and of the island of St. Helena; where it grows by the side of rivers. This plant requires so much moisture that it is sometimes grown in aquariums, the root being covered by stones to keep it in place. The leaves, when young, are eaten raw in Egypt; and in that country, as also in the Levant, the root is boiled for food. A cosmetic is made by the French from the dried and powdered root of one species. It is also used in medicine, though more seldom now than formerly. This beautiful lily, with its shining arrow-shaped leaves, and pure white flower, makes a majestic ornament for a window-seat; or looks finely as the centre of a group of more gaily colored and smaller plants. It is increased by off-sets, that form on its thick, fleshy roots. These should be first placed in small pots, in a soil three parts sandy loam and one of well-rotted leaves, with a handful of pebbles beneath. As the plant increases in size, give it a larger pot every year, with soil prepared as above. Water frequently, for it will not flower if it once becomes dry while in a season of growth. After blooming, the leaves will begin to wither; then, lessen the water, giving it only enough to keep it alive. When the leaves are all dead keep the plant dry, and in the dark, about a month, for entire rest; then re-pot it. As soon as the new leaves have started, set the pot in the sunshine; and, early in October, bring it within doors; let it have a warm, sunny situation till the flower-bud appears. Remove, then, to the shade, but keep it where it is light. Supply water abundantly. Let the saucer be always full;—if it imbibes too much it will be thrown off in drops from the points of the leaves.

The Camellia Japonica is one of the most beautiful of house-plants. It takes its name from Kamel—Latinized, *Camellus*—a Moravian priest, who travelled in Asia, and was first carried to Europe from Japan, or China, 1739. This flower and the chrysanthemum are favorites of the Chinese, and are very frequently introduced into their paintings. In its natural state it grows to a large tree; and its deep green foliage and elegant blossoms—red, white, yellow, or purplish—sometimes variegated and blotched in color, render it one of the finest objects in an Oriental landscape. The seeds are boiled and crushed to obtain an oil, one kind of which is used for anointing the hair; others in medicine; others in cookery. It is to this large family that the tea-plant belongs; and many beautiful flowering trees and shrubs.

The camellia is usually propagated by cuttings, as it takes a long time for some varieties of the seed to come up. Yet, sometimes, seeds planted in boxes of earth in China will become seedling plants before reaching this country. The cutting should be taken from the base of a leaf, or at a joint, as soon as the wood is ripened, and placed in damp sand, under a glass. From this, when well rooted, transplant to a pot one-third full of broken charcoal covered with dry moss. Lay upon this moss the soil, composed of well-washed river-sand, peat, light loam, and rotten leaves, in equal proportions, well mixed. When the plants are growing they need a great deal of water, but the leaves will blister and become stained if wet when the sun is shining upon them. If kept too dry, the buds will drop off. There is danger that the roots will get matted, so they must be re-potted every year. This should be done as early as possi-

ble after flowering. Then, during the summer, keep the camellia cool and shaded; setting the pot away from the dripping of trees or bushes, upon a pavement of cinders, and watering it regularly. In September bring it to the sunshine; and be sure to take it in-doors before the evenings get chilly. As soon as the buds are formed set the plant away from the sun, yet in a light, airy place, and the flowers will open well and remain long. Keep the leaves free from dust, but do not sprinkle the plant while in bloom, apply the water directly to the soil. If you wish for large flowers allow only one bud to remain on each terminal shoot. After blooming, prune immediately, but not too close.

Carnation. This flower belongs to the Pink family, called by botanists, Dianthus, the flower of God; because of the esteem in which their beautiful and fragrant flowers were held. Carnations were formerly called "coronations," and "clove July-flowers:" pinks were called "soppes in wine," because their petals were used to flavor goblets of wine, as rosemary tankards of ale. Carnations were first introduced into England from Germany. Many are brought from Italy, and those flowery lands, the islands of the Mediterranean; but they seem to have been unknown to the ancients. There are three kinds of carnation. Flakes—striped with broad bands of two colors; Bizarres—striped, or streaked, with three colors; and Picotees—white, spotted or bordered with some dark color. These last are the hardiest, though seldom so large a flower as the others. They are sometimes raised from seed, obtained in Vienna and some of the Swiss towns, which if corked in phials will keep in good order for growth many years. But the better way is from layers.

Early in spring set a mature plant in the hot sun until it droops: because when the branches are wilted they will not break easily, and the shoots to be operated upon ought not to lose their connection with the parent stalk. Select three or four of the strongest lower shoots. Cut each shoot about half through, in a slanting direction, at a joint. Make a furrow in the soil just beneath it, rather more than an inch deep, and lay the cut stem within it; fastening it down with a bit of bent wire, or an old hair-pin. Then cover the wounded part with the soil, but let the end of the stem remain an inch or two out of the earth. After they are rooted set them together in a five, or six-inch pot. Fill the pot one-third with broken charcoal and cinders. Lay upon this a mixture of rotten leaves, fibrous peat and sea-sand—or common sand—with a little salt. Press this soil very firmly about the roots. Keep the pot in the shade, water it regularly. Be sure that no worms can get at the roots. By October the shoots will need tying to a rod, or a stout wire. Take them into the house, and give them the full benefit of the sun; and as soon as the buds appear, water them at evening, as well as in the morning. As the calyx is apt to burst, when the buds are fully swollen, open its sepals a little, with a pin, or a sharp penknife; and make a ring from a round piece of pasteboard, or of fine elastic cord, and slip it on the bud, placing it so that it may be a support for the calyx, and may keep the petals in regular form after the expansion of the flower. Cut off each blossom close to the next joint as soon as it withers; and when all the buds have opened, if the plant looks slender and weak, cut every branch back, evenly, three or four inches. Some persons make little umbrella-shaped caps of paper, and attach them to the rod which supports the flower so as to shade it during the greatest heat of the sun.

Chrysanthemum. This name, signifying golden flower, comes from the Greek; and the plant is so called because many kinds bear yellow flowers. One variety was carried from the island of Sicily to England as early as 1629; but the most beautiful are of more modern origin, and have been brought principally from China. The gardens of the Inner and Middle Temple, London, were once a source of great attraction on account of this flower, which, for over thirty years, was very successfully cultivated there. Chrysanthemums can be made into wreaths, or worn singly in the hair, without losing their brightness, or drooping at all, during a long evening; and they are among the best of flowers for vases. There seems to be some peculiar property in their juices which not only prevents their own decay, when kept in water, but helps to hinder the decay of other flowers that are mingled with them. The flowers of different varieties of Chrysanthemum vary as much in form, as in color; but any of them are beautiful enough, if proper care is taken to have the plant grow in good shape, for a parlor ornament from October to

the last of December. This is their season of blossoming. After it is over they should be kept in a cool dry cellar till spring. The chrysanthemum is easily raised from suckers, from division of the roots, or from cuttings. It should have a small pot at first, and be set in light, rich soil—loam peat and powdered charcoal. Do this in May, and set the pot among garden flowers. Water it regularly, but not too much. In July the plant will need a larger pot; and, again, in September, a still larger one. This changing will make it grow stout and bushy, and cause it to bloom abundantly; but be careful not to loosen the soil from the roots when transplanting. Old plants should be taken from their pots early in the spring, all the soil shaken from their roots, and the suckers trimmed off. Set them in fresh soil, mixed as before; and water them with liquid manure till the foliage is well developed. Then give them the same treatment as young plants, and they will continue stout and healthy many years. Be sure that the pot is not exposed to the scorching heat of the sun. If it cannot be shaded by setting it among bushes in the garden it should be sunken in the mould, for, although the leaves and branches require a good degree of heat, the roots should be kept cool and always moist, though not too wet. Soap-suds agrees well with the chrysanthemum; but if that is used in which clothing has been washed, it should be strained, as the lint which it contains is apt to form a crust on the surface of the soil.

Daisy. This little plant well deserves its botanical name, *Bellis*—pretty,—and its neat tufts of delicate green leaves, surmounted by bright pink blossoms, ought to have a place on every flower-stand. It grows wild in England and Scotland, but of less handsome form and color. Cultivation has given it the button shape of its flower, and also its glowing, sunset hue. Burns often alludes to this "wee, modest, crimson-tipped flower," as he calls it, in his poem to the daisy that he turned down with his plow one dreary April morning; and it has long been a favorite with English poets. Wadsworth dedicated three poems to the daisy; Spenser sang of the "little dasie that at evening closes;" Chaucer called it the "e'e of daie," and "la douce Marguerite;" and Ben Jonson has a friendly word for the "bright day's eye." Chaucer was very fond of it. In his time it was called, as now, in France, Marguerite; and considered an emblem of constancy in love. He would lie for hours upon the grass looking at it, and, dreaming of fair ladies and brave knights, frame his poems of chivalry.

Many compound flowers—among which is classed the daisy—have their rays in an erect position during the night,—like "the marigold, which goes to bed with the sun, and with him rises weeping." This sleep of the flowers was discovered by Chaucer, in his observation of the habits of the daisy.

The daisy is generally used in edgings of beds and borders, in England and France; and being very prolific, and blooming early, it is always desirable for that purpose; the French, because it is in flower about Eastertime, sometimes call it "*paquerette*" (not so beautiful an appellationas "*marguerite*"—the pearl.) It thrives best in a rich, loamy soil; and is propagated by off-sets, or division of the roots. Fill a small pot with a mixture of sandy loam and peat, and in this set the young plant, pressing the soil firmly about the neck, water it to settle the earth well, and shake the pot for the same effect; and if the soil has fallen away from the plant, add a little more. This should be done in May, and the pot kept in an airy, cool place, and watered occasionally—just enough to keep it from getting dry—till the first of October. Then, set it among your parlor plants, letting it have a front place at the window; as it will need the sunshine to bring forward the flowers, which will be hastened, if liquid manure be given it. Every spring the daisy needs re-potting, and should have its roots divided. It will bear transplanting, even when in bloom, if the soil is not entirely detached from the root.

Daphne. This is the Greek name for the laurel-tree, which it resembles; and which was so called in honor of a beautiful nymph, the daughter of a river-god. According to ancient mythology she was beloved by Apollo, but she rejected his suit and determined to escape him. Praying for aid, she was metamorphosed into a laurel; which became, in consequence, the favorite tree of Apollo. *D. odorata*, (erroneously styled *D. odora*) is the species generally known as a fine window-plant. It has dark, glossy, laurel-like leaves; and very fragrant, wax-like flowers of pearl, or rosy

white. It will flourish and bloom, even when neglected; but it well repays all care spent upon it. It was introduced from China in 1770, and is easily propagated by cuttings. Set it in a pot drained with broken brick or cinders; in a soil, four parts loam, two of leaf mould, and one of sand. Old plants should be re-potted in September, with a ball of earth about the roots. If kept in an equal temperature of moderate heat, day and night, it will bloom from December till the last of March. After blooming, prune it freely, or it will have an awkward, scrubby appearance. Keep the leaves free from dust. To effect this it will need frequent syringing through the winter, if in a small room.

Eupatorium. Pliny says that this plant derives its name from Eupater, king of Pontus, who first used it in medicine. Many species have been discovered on this continent; but few are found in Asia, less in Africa, and not one in Europe. Several ars medicinal, as *E. perfoliatum*—boneset—thoroughwort—or feverwort, and *E. rotundifolium*—hoarhound. Others are ornamental, lifting their branches of bright green foliage crowned with clusters of tassel-shaped flowers, white, purple, blue, or pink, by the side of woodland streams, or along lonely mountain paths. But the florist has adopted them; and under his loving care their beauty has been greatly enhanced. *E. ageratoides* and *E. cœlestinum* are among the best for cultivation, and are very desirable as funeral flowers. Grow them in a soil of peat, sand, and loam. Water them freely. Give but little sun when in bloom. Propagate by cuttings, started in the spring; and water daily through the summer. In the autumn they will have attained a good height and strength for blooming through the whole winter. Cut the flowers when in full bloom, as the seeds are quickly ripened and set free,—sometimes wafted to the soil of other plants, and germinate where they are unwelcome. Old plants should be cut down in May, the soil shaken from their roots, and re-potted lest they should get pot-bound.

Fuchsia, sometimes called Ladies' Ear-drop. Named in honor of Leonard Fuchs, a German botanist. It is a native of the warmest parts of America—was first discovered by Father Plumier, a Jesuit, on one of the French Islands; and introduced for cultivation by Miller, in 1774. Since then many varieties have appeared. A sailor boy carried his mother in England, a plant from "over the sea." For his sake she cherished it with great care. It stood at her window, and one day attracted the attention of a horticulturist, who was passing. He immediately bargained for its purchase, and for many years this was one of the best species known. The fuchsia is increased by cuttings rooted in damp sand and covered by a glass, then changed to a pot filled one-quarter with sherds. Soil—loam, peat, and leaf-mould, in equal proportions. Break up the peat, and mix the parts well, but loosely. Do not injure the rootlets in arranging the soil about them. Water it well. Give it air, and shade. In a week or two tie the centre stalk to a stake. Thin out the side shoots—let only enough remain to give the plant a symmetrical shape. When the branches are two or three inches long, pnich out their tips, to make them grow bushy; and, if you choose, the centre stem, also, when it is three feet high. Give liquid manure to hasten the buds; and place in the sunshine. If the branches droop too much, arrange rods or wires at the edge of the pot and tie them up. After blooming prune closely, and re-pot. All fuchsias are so beautiful it is useless to particularize any species. The flowers when cut remain fresh a long time; they are therefore in much request as ornaments for the hair and for boquets.

Forget-me-not. An old legend of the Troubadours tells us that a knight and a "ladie faire" were walking beside a stream. And the lady seeing among the sedges a little flower of "heavenlie blue" expressed a desire for it. Her companion hastened to gratify her wish. With much difficulty he succeeded in gathering the blossoms; but the tide was rising rapidly, and his strength failed. Throwing the flowers toward her, he cried, "Forget me not;" and sank beneath the wave. This is the origin of the name. It grows wild in England, in damp places, but is transplanted to gardens; and in Paris pots of forget-me-not are regular articles for sale in the markets. It is said that after the battle of Waterloo an immense quantity of the plant sprang up on the field. The Germans decorate their tombs so frequently with it that they may well call it "the flower of death." Among Italians it is the periwinkle With us it has lately been brought into notice,

as a small border-flower for the garden. But it thrives best as a house-plant, raised either from seed, or division of the root. It needs a rich soil of peat and loam, and a good deal of water.

Geranium. Name, meaning Crane's bill, from the Greek, alluding to the form of the seed-vessel. This genus bears so great resemblance to Pelargonium—Stork's bill—that both generally go by the same name; but plants of the stork-bill family bear the larger and more showy flowers. Geraniums proper, are chiefly natives of Europe,—there are a few American species—and, in many cases, are mere weeds. Pelargoniums come from the Cape of Good Hope, and in their natural state are very beautiful. There are also hybrids of the two, uniting the best qualities of each. As early as 1596 geraniums were brought from Italy to the North of Europe; but with the exception of one small species no pelargoniums were cultivated till the latter part of the last century. There is little art in growing them, so geraniums are our commonest house-plants. Leigh Hunt has said "if one have a solitary plant, let it be a red geranium;" and that his opinion has received general endorsement, we have full proof in the prevalence of that species. These plants need plenty of light, and air, and cleanliness. They should be often syringed; and the branches tied out so that light and air can be admitted to the centre of the plant. Thus they will gain strength and every shoot throw up its flower-buds without interruption, Arrange rods or wires around the rim of the pot for this purpose, and avoid pushing sticks or wires among the roots. Do not water too much. The succulent kinds need scarcely any water, except when preparing to bloom. A little weak liquid manure is necessary for fine blooms, and to give a healthy, green appearance to the leaves. Any geranium is propagated easily by cuttings kept a few days in water and then placed in good soil under a glass. In May, old plants must be re-potted. A handful of pebbles and charcoal being in the bottom of the pot, throw over it soil of loam and decayed leaves—for the dwarf kinds a portion of sand added. With a sharp knife cut the new wood of the plant back to a few joints. Of these pieces you can form new plants, and the old geranium will grow stouter and more bushy. Take the old plant from its pot; and trim off the ball of earth, so that it may have an inch or two of fresh soil in the new pot, which should be a size larger, year by year. Fill the soil around it carefully, shaking the pot, or striking it to settle it well; and press the soil gently about the collar of the plant. Water it and keep it in the shade a month; then give it a place where it can receive the sunshine upon its foliage without heating the pot; or, sink the pot in the ground till September. Bring it then to the parlor, and water it daily with warm water; adding liquid manure as soon as the flower-buds appear. It is unnecessary to mention any especial variety, tastes differ so much; but it would be wise to have at least one representative of the sweet-scented geraniums on every flower-stand, for their foliage is beautiful, and their blossoms are neat if not very attractive. They are always needed to accompany the white and the purple flowers which friendship gathers as its last gift to the loved departed; and, indeed no bouquet of exotics appears complete without their presence.

THE
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DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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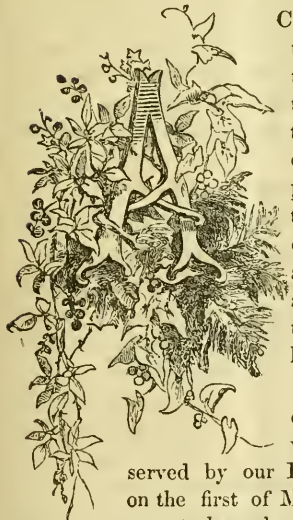
MAY, 1867.

Warm with new life, the glittering throngs,
On quivering fire and rustling wing,
Delighted join their votive songs,
And hail thee Goddess of the Spring.

DARWIN.



CONTRAST between the customs of our own time and some of those which have existed among people who had their period upon earth long ago, and then passed away, is sometimes exceedingly interesting.

Some of the customs which were always observed by our English ancestry on the first of MAY, and which seem to have been rooted in the very hearts of the people, have come down to us; but transplanted into a more rigid climate, they have become chilled, and have lost much of that freshness and vitality which they exhibited through so many ages in their own sea-girt isle.

There, it was anciently the custom for *all* ranks of people to go out a Maying early on the first of May. *Bourne* tells us that, in his time, "In the villages in the North of England, the juvenile part of both sexes were wont to rise a little after midnight on the morning of that day, and walk to some neighboring wood, accompanied with music and the blowing of horns, where they broke down branches from the trees, and adorned them with nosegays and crowns of flowers. This done, they returned homeward with their booty, about the time of sunrise, and made their doors and windows triumph in the flowery spoil."

This is, every season, attempted here; but under what different aspects and circumstances! The girls with blue lips instead of red, with woolen hoods upon their heads, and hands encased in fur gloves; and the boys with thick boots, mittens and overcoats! The ruts are deep and somewhat frozen; patches of snow lie in the woods, and, although the sun shines, its warmest beams are neutralized by the northwest winds which come sweeping over the hills. Their music is the "blowing" of certain nasal projections, the dim notes of a shivering blue-bird, or the doleful wail of an old field lark, complaining that she had come north altogether too soon!

As to flowers, they are "like angels' visits, few and far between." Miles of hill and dale are searched before the effort is rewarded by anything that "blows," except the wind. The sight of an "*Early Crowfoot*" and a bunch of

Cowslips in the wet meadow, puts the poets in high spirits, but a patch of the *Trailing Arbutus*, exhaling their charming fragrance into the air, crowns their researches and the heads of the girls, and off all scamper for a warm room and a hot breakfast.

It is no use to try to sing *our* Mayday into an English Mayday. The weather and the winds are against us. The poets must give it up, and the girls and boys must give it up. Our better way is, to get up an institution of our own, and be sure and fix the time late enough to dispense with overcoats and fur mittens. Say the first of June, or, if earlier, the 20th of May; that is the time when cows are turned to pasture, and it is supposed there is some *green* thing, *then*. Besides, the twentieth of May has been said to be particularly lucky for lovers to meet in couples to marry; at least, so an ancient ballad says, in a "*Song to Harriet:*"

"Of the three summer months they say,
The most of luck is the twenty o' May,
Our hearts and hands to join;

This bloom which fills the fragrant air,
Shall rest upon thy bosom faire,
And thou shalt rest on mine."

So, if you are all agreed, we will have the "first of May come on the twentieth," or at least postpone going a-Maying until that time. Customs, like virtues, come slowly; so that it is time we stop imitating others, where it is impossible to graft their graces upon our more rigid climate, and strike out something *of our own*, which shall become a custom worthy of remembrance and record.

But MAY is a busy month; we cannot stop long among the romping boys and girls, nor even the poets. The first thing which we ought to do, is to see that every thing is provided in the house and around the house, for the *convenience and comfort of the women*. Their lot is harder than ours. They have less hours of relaxation, are confined more at home, and have less of the outside world to excite and interest them than men. And then, generally, they do not hold the purse, and do not find it so convenient to purchase many little matters of convenience or of labor-saving, as those do who are in the habit of making the purchases. This should be the item of *first consideration* in our spring work. In the subjects considered, the next should be that of

SETTING AN ASPARAGUS BED,—because it will be a comfort to the women to adorn the table with an elegant dish, and at the same time provide the family with a wholesome and nutritious vegetable. Obtain one or two hundred good roots, two or three years old, and set them in a trench a foot wide and deep, and a foot apart in the trench. Spread the roots out, at a distance of one foot apart on each side of the trench, making two rows in one trench, or 100 plants in 50 feet. Before marking out the trenches, the whole plot ought to be spaded two feet deep and an *abundance* of manure mingled with the soil. If well done and tended, the bed will continue from ten to one hundred years.

DRY PASTURES.—Remember the short feed in pastures in July and August. Do not turn stock upon them too early. Sow oats, millet and corn, for feeding out when the pinch comes.

THE CORN CROP.—Get it in early—by the 10th, if you can. Plant well, and you can hoe well. A field well planted will be cheaply tended, compared with one hastily and imperfectly planted. Steep corn in saltpetre or copperas water, if liable to be pulled up.

ORNAMENTAL.—Do not forget to plant the shade trees in front of the house, that you regretted you had not done some years ago! Nor to enclose a spot for a garden, near the house, and begin to fill it with plants for small and large fruits.

GRAFT THE TREES that need it.

CULTIVATE ROOTS for the stock. Turnips, carrots, beets, mangolds, parsnips, &c.

EARLY CORN.—Plant it early, and continue to plant small patches, and you will have an abundance of it until heavy frosts come, and the fattening hogs will fare well, too.

PLOW AND MANURE EARLY.—Plow the fields twice, if convenient. We do not plow the land enough. Twice is better than once—three times better than twice, often.

BE PROMPT, but moderate; be *prudent*, but not doubting; be *temperate*, but live generously; and this will be the most useful and satisfactory *Month of May* you have ever lived.

—The Michigan Senate has passed a bill appropriating $20,000 for a building to be used by the State Agricultural College.

NEW PUBLICATIONS.

THE AMERICAN NATURALIST, a Popular Illustrated Magazine of Natural History. Vol. I.—March, 1867, —No. 1. Salem, Mass., Essex Institute. Monthly. Pages 56. Price $3.00. Alpheus S. Packard, Edward S. Morse, Alpheus Hyatt and Frederick W. Putnam, Editors.

Farmers lose many hard days' work by the depredations of insects. We ought to know more about them than we do. Those of us who are too old to go to college to study their habits, and learn their classical names, must employ the next best means, and read books and papers. Instead of cloistering up their wisdom as of old, the scientific men of our day are disposed to let their light shine for the benefit of all. Indeed they are very glad to exchange their knowledge of the "Lepidoptera," "Diptera," &c., &c., for our "Chenangoes," "Ruta bagas," and the like. Will not the exchange be mutually beneficial?

The first number of this new work has articles on the Land Snails of New England; The Volcano of Kilauea, Hawaiian Islands; The Fossil Reptiles of New Jersey; The American Silk Worm; Winter Notes of an Ornithologist; Reviews; Natural History Miscellany; Correspondence; Natural History Calendar; Proceeding of Scientific Societies; Glossary, &c. Paper, printing and cuts, all in best style.

BEET SUGAR.

In the April number, we published some account of the factory established at Chatsworth, Ill., for the manufacture of beet sugar, in which it was stated that the company had roots enough on hand to produce 400,000 lbs. of sugar. The *Prairie Farmer* says that ninety-one barrels of sugar were sent to Springfield from this factory on the 26th of February. The same paper contains an article upon the subject from a correspondent in the city of New York, who says:

A company is about to be organized here with a very large capital for the purpose of establishing beet sugar works near La Salle. The leaders in the movement have visited beet growing districts in France and Germany and are familiar with best methods and latest improvements.

For my part, I see no reason why sugar cannot be made in this country from beets, as certainly as bread can be made from wheat. When we do it, as I believe we shall, and save the 80 millions in gold which we annually send abroad for sugar, we not only give employment to multitudes of our people, but we solve the question whether we soon pay the national debt. After supplying our own wants, the next step will be to export to foreign countries. Some here are so sanguine as to predict that within 15 years we will send sugar abroad. I have seen too many things slip up in my life to believe everything, but I will venture to say that Illinois corn is about to become a crop of third rate importance, and that a day of brilliant prosperity immediately is before the grand old Prairie State. N. C. M.

WOODEN BOXES FOR THE CANKER WORM.—It appears, by the recently published Transactions of the Massachusetts Horticultural Society, that, next to Hovey & Co., the largest amount of premiums was awarded by this society to F. & L. Clapp, of Dorchester, whose fine orchard is surrounded by canker worms. These gentlemen, it is stated by Mr. Hyde, the chairman of the Fruit Committee, have effectually protected their trees by the use of the wooden boxes which have been frequently recommended by correspondents of the FARMER, and of which a brief description will be found on another page. Although the committee say that the "apple crop proved the past season, in the vicinity of Boston, a greater failure than ever," they speak of the large quantities of fine Gravenstein, Williams, Baldwin and other varieties which were exhibited by these gentlemen, during the past year.

For the New England Farmer.

REMEDY FOR THE CANKER WORM.

While on my way to Boston last summer, I saw several orchards that had the appearance of having been visited by that pest the canker worm, and I determined then to communicate through your valuable paper, in season to give those that wish an opportunity to thwart their depredations the coming year, the following cheap and efficient protection:—

Put one or more bushels of clean common mill sawdust, (according to the size of the tree and shape of the earth) about the trunk in a symmetrical mound, piling it carefully and lightly as high as it will stand, and no creeping insect can mount it. It should be looked to every evening during the spring, or time of their running up the trees, and carefully trimmed up or repiled. I tried this remedy several years ago in an orchard that the canker worms had most shamefully abused the year before, and it proved efficient, no worms that year, nor has there been any since. But I don't attribute their long absence to one application of sawdust. I expect they will visit this locality some time, but when they do they will be likely to find a plenty of the dust.

Perhaps I ought to say that I know this will

stop the female bug, for I have seen a dozen of them around one pile in the morning, struggling desperately to get up, but to little purpose, as I never saw one half way to the top of a well made pile. Thomas Ellis.

Rochester, Mass., Feb. 25, 1867.

Remarks.—The canker worm is extending its ravages not only in New England, but in the Middle and Western States. We gladly publish every fact that seems to cast a ray of hope upon the subject, although we must confess that we are less sanguine than our correspondent of the efficacy of his recommendation.

Gunpowder Waste.—We are informed by another correspondent that when O. M. Whipple, Esq., the well known gunpowder manufacturer of Lowell, commenced business in that place, his purchase of real estate included about two acres from an apple orchard of some ten acres. With the idea of benefiting the soil, he applied some of the "waste" from his mill about the trees on his land. In the course of a few years canker worms commenced their work of destruction upon the trees of the original orchard, but left unmolested those on his two acres, although separated only by an ordinary fence. After they had worked some six or seven years, Mr. Whipple purchased the remainder of the lot, and by applying this waste he banished the insect entirely from the whole orchard, and has not been troubled by them since.

Our correspondent understood Mr. Whipple to express the opinion that the efficacy of the waste in this case, might be owing, in part at least, to the salt which it contained. We were not aware that salt was used in making powder. Saltpetre, sulphur and charcoal are generally understood to be the main ingredients of this wonderful product, but we do not know what other substances may be employed in the process of manufacture, and thus find their way into the waste of the mill, which we understand, when judiciously applied, has proved to be a most lasting fertilizer.

On behalf of many despairing fruit raisers, we would solicit a fuller statement from Mr. Whipple.

Wooden Boxes.—At the request of several of our readers who have lost their copy of our paper containing the statement of Mr. G. B. Moulton, of Kensington, N. H., who successfully protected his trees from the canker worm by means of wooden boxes, we re-produce the following directions:—

"In the spring of 1865 I placed wooden boxes, ten inches high, around all these trees, allowing a space of two inches between the tree and the inside of the box. It would have been better to have left a space of three inches. I filled the inside with tan, and made it solid by pressing it down with a strip of board. The gutter around the boxes was placed about three inches from the top; the corners being made tight with roofing cement; and a clapboard was nailed on the top edge of the boxes, so as to form a roof over the gutter. I filled the troughs with 'bug oil,' which can be obtained in Boston at from twenty to twenty-five cents per gallon. This I prefer to coal oil, because it will not skim over; while the coal oil will skim over in forty-eight hours and afford a bridge for the grubs. There are two kinds of this bug oil—the thin and the thick. I prefer the thick for wooden troughs, as the thin is liable to leak out. When they run the thickest, the surface of the oil needs to be cleared off as often as once in two days. I use a piece of lathe for this purpose, and a tin quart measure with a long lip to turn in the oil.

"The cost of these boxes is not great. I paid seventeen cents a piece for making the boxes, and found the stuff. Any kind of cheap boards will answer. For the gutter two-inch stuff of good quality should be used. I purchased second-hand tubing used for chain pumps which cost two cents per foot. Dividing this, my troughs cost one cent per foot. Some that I had made, cost two cents per foot for making. The clapboard should be of good quality, so that it will not crack by the weather. My trees are very large, and some of my boxes were about ten feet around them. I estimate the boards at seven cents per box—troughs ten cents, and clapboards at three cents—making the whole cost of boxes at thirty-seven cents per tree; and the whole cost of oil, tan, and labor, not to exceed one dollar. For any ordinary orchard, this would not exceed fifty cents per tree. It takes, for troughs of this size, about one quart of oil at a time."

It will be remembered that Mr. Moulton considered his experiment a perfect success, and that his care and labor was rewarded by a fair amount of fruit last year. The objection that the young worms, hatched from eggs laid below most protectors, are able to surmount the obstacles which impeded the ascent of the full grown female, is obviated by the use of the trough of oil.

—The *Gardener's Monthly* says that most of the failures in planting raspberries and blackberries, arise from planting too deep.

USES OF SAWDUST.

The inquiry has often been made, whether sawdust is in any way valuable to be used on the farm? The reply has usually been, that, as it is made up of portions of various plants and is therefore vegetable matter, it must be useful. But how it ought to be treated, and under what conditions it acts the most favorably, are points not yet fully settled.

In its use for one purpose, we can scarcely err. It forms a soft and *excellent bedding for stock*. It is easy for cattle to rest upon, absorbs a large portion of the liquids, and serves to keep the cattle clean, and, therefore, in a healthy and thrifty condition; and this is of no small consideration. All animals thrive according to the degree of health and comfort which they enjoy, as well as according to the amount and quality of the food given them. An ox well fed, but exposed to severe cold and storms, would be likely to gain only half as much as he would if properly sheltered. So if he were so situated as to be obliged to stand all the time, he would soon become so uncomfortable as not to gain more than half as fast as he would if he could lie down, when inclined to do so, upon a bed of dry sawdust or litter.

Mr. Asa G. Sheldon, of Wilmington, who probably has done as much *teaming on the road with oxen* as any man in New England, once told us that oxen would do better to travel *twenty* miles a day and rest upon a good bed of straw or other litter, through the night, than they would to go only *sixteen* miles, and lay upon bare planks at night! This is certainly awarding great efficacy to the bed, but it comes from good authority, and is probably correct.

Sawdust is not easily decomposed, but it is an excellent absorbent for liquid manure, and when well soaked with urine, ferments readily. It is also excellent, as a divider, to mix with night soil, wool waste, or other highly concentrated fertilizers, and when well incorporated with them, forms a manure heap that may be easily and pleasantly handled. It is stated by chemists that "sawdust, during decomposition, forms certain acids, which act as excellent fixers of ammonia, and that when well mixed with dilute sulphuric acid, it is one of the best materials which can be employed for fixing the ammonia given off in stables."

In speaking of sawdust used as a fertilizer, one of our valuable correspondents, "*Oak Hill*," wrote us in 1859, that he thought its virtue equalled, if it did not surpass, any enricher of the soil he ever saw. He wet it and mixed it freely and thoroughly with the soil, but did not state from what wood it came.

Another of our correspondents, Mr. F. J. Kinney, who had used large quantities of sawdust, and made numerous and careful experiments with it, wrote us, some seven or eight years ago, quite a long and minute account of his practice, which we condense, and give as follows:—

"I used 100 cords in nine months in this way. I put the sawdust on the floors about six inches thick, and as fast as it was saturated with urine, shoved the cattle and hogs' bedding into the manure vault, together with the manure, tramping it as hard as possible, and the horse bedding and manure under a shed. I soon found it must be turned or something else done with it to keep from fire-fanging.

"After trying various plans, I found the best was to turn water on it—enough to keep it moist and cool—and let it remain in as solid a body as possible until I drew it out, and then put it in flat heaps, two or three cords in a heap, and a foot thick after it was well trodden down.

"I put a pair of steers into a small yard during the night for two months in the fall, throwing sawdust under them three times a week, one-third of a cord at a time. This lay until the spring, when *four* cords of number one manure were taken out.

"Solid manure must all become liquid before vegetables can be benefited by it in any way, and sawdust has a marvellous faculty of holding on to liquids and gases.

"I never smelt a disagreeable odor around our stables while using the sawdust, except when it burned, and never saw any liquid leaching out from under the heaps on a clayed bottom, though we used water plentifully, often running on two barrels to a cord, at a time.

"Used it with manure, side by side, on various crops and soils. Plowed it in; used it as a top dressing on plowed land and grass land, and for that year there was no perceivable difference except on dry land, where the sawdust manure was best. I ought to say sawdust and manure, for the sawdust had not changed much, and was not worth one-half as much as it was after it had laid over the summer and become decomposed.

"I put *four* cords on half an acre that was too stony to plow, and at the same time ten bushels of oyster-shell lime under it. The hay crop was doubled the first year and quadrupled the second. The sawdust manure operates equally as well on any other crop.

"Wherever I have examined the roots of a vegetable grown where sawdust, chip or leaves and stable manure had been used, I found

them embracing with their delicate fibres every atom of the vegetable matter within their reach, and undoubtedly drawing their natural sustenance from them. There is nothing that I have tried as an assistant fertilizer that holds so much liquid or retains it so long, where only the sun and air operate on it, as hard-wood sawdust.

"There is much difference in sawdust. It would be:—

1st quality, hard wood, hickory, maple, &c.
2d quality, poplar, basswood, chestnut, &c.
3d quality, spruce, hemlock, pine, &c."

Mr. J. CROSS says,—"I have used sawdust for bedding for ten years, and would not be without it, if I could obtain it by going four miles after it. My cows go from the barn as clean as they came from the pasture in the fall. "A. L. W." of Hope, Me., says it is the very best thing to use for bedding under horses and cattle.

We have thought it well to refer to this matter, as there are mills in nearly every town where quantities of sawdust are allowed to run to waste. In some places, where a large amount of lumber is cut out and manufactured, almost any quantity may be obtained.

WOOL-GROWERS' ASSOCIATION.

The New York State Sheep-Breeders' and Wool-Growers' Association,—Hon. Henry S. Randall, President, and E. B. Pottle, of Naples, N. Y., Corresponding Secretary,—will hold an annual Fair at Auburn, May 8, 9 and 10, 1867.

This Association of the Wool-Growers of the Empire State is doing a good work. Two annual Fairs have been held, at which facts of the highest importance to every sheep farmer were developed. At the ensuing Fair in May, prizes of $30, $20, and $10, respectively, are offered on the following six classes of sheep; with a sweepstake of the society's diploma on each class except the 4th. On the 4th class $15, $10 and $5 for the first, second and third best five lambs, without respect to sex.

First Class—AMERICAN MERINOS.

Second Class—FINE MERINOS—yielding a wool adapted to the manufacture of fine broadcloths and other fabrics requiring a staple of equal quality.

Third Class—DELAINE MERINOS—yielding a wool adapted to the manufacture of delaines and similar fabrics—length of staple being a leading consideration, but in which neither extreme fineness of fibre, as required in the second class, nor great weight of fleece, as required in the first, are to be regarded as absolute essentials.

Fourth Class—LAMBS—of preceding classes.

Fifth Class—LONG WOOLED SHEEP—including the Leicesters, Cotswolds, Lincolns and other breeds and varieties usually comprised under that designation.

Sixth Class—MIDDLE WOOLED SHEEP—including Southdowns and other sheep usually so classed.

Special prizes are also offered as follows:—

D. D. T. Moore, $25 for the Merino Ram's fleece, of one year's growth or thereabouts, sheared at the Fair, which, on being cleansed, shall be found to give the greatest weight of wool, in proportion to its time of growth and to the live weight of the animal.

A. F. Wilcox, $25 for Merino Ewe's fleece, same conditions.

William R. Pitts offers a prize of $25 for the Merino Ram's fleece, of one year's growth or thereabouts, sheared at the Fair, which, on being cleansed, shall be found to give the greatest weight and value of wool, in proportion to its time of growth, without reference to weight of the animal. David Cossit $25 for Merino Ewe's fleece, same conditions.

Henry S. Randall, $25 for English Long Wooled fleece, conditions same as for the Pitts and Cossit prizes.

Prizes of $10, $8 and $6 will be awarded to the three best shearers.

NEW ENGLAND AG'L SOCIETY.

The annual meeting of this association was held in Boston, March 7. The following officers were elected:—

President—Hon. Geo. B. Loring, of Salem, Mass.
Secretary—Daniel Needham, of Groton.
Treasurer—Isaac K. Gage, Fisherville, N. H.

VICE PRESIDENTS.

S. L. Goodale, of Saco, Me.; Hon. Frederick Smyth of Manchester, N. H.; Daniel Kimball, of Rutland, Vt.; William Birnie, of Springfield, Mass.; Amasa Sprague, of Cranston, R. I.; E. H. Hyde, of Stafford, Conn.

TRUSTEES.

Maine—Seth Scammon, of Scarborough; Columbus Stewart of North Anson; Waldo T. Pierce of Bangor; Geo. W. Ricker of Bath; and J. F. Anderson of South Windham.

New Hampshire—Moses Humphrey of Concord; S. W. Buffum of Winchester; W. F. Estes of Dover; Geo. W. Riddle of Bedford; Virgil C. Gilman of Nashua.

Vermont—Geo. Campbell of Westminster; D. R. Potter of St Albans; Henry Clark of Poultney; Ebenezer Bridge of Pomfret; and Thomas Saunders of Brookfield.

Massachusetts—S. H. Howe of Bolton; G. T. Plunkett of Hinsdale; Levi Stockbridge of Amherst; Charles P. Preston of Danvers; and S. B. Phinney of Barnstable.

Rhode Island—Edward P. Pearce of Cranston; David Pike of River Point; A. B. Chadsey of Wickford; J. D. W. Perry of Bristol; and Thos. B. Buffum of Newport.

Connecticut—J. J. Webb of New Haven; Benj. Sumner of Woodstock; H. S. Collins of Collinsville; Burdett Loomis of Windsor Locks; and G C. Hitchcock of New Britain.

Governor Dyer, of Rhode Island, moved that the subject of the next exhibition be referred to one trustee from each State, with instructions to report to the full board. The motion was carried, and the chair appointed as the committee Messrs. Anderson of Maine, Estes of New Hampshire, Bridge of Vermont, Howe of Massachusetts, Pearce of Rhode Island, and Webb of Connecticut.

At a subsequent meeting of the trustees, the ex-

ecutive committee, consisting of the president and secretary of the society, and Messrs. Anderson of Me., Smith of N. H., Birnie of Mass., Pearce of R. I., Clark of Vt., and Sumner of Ct., were ordered to negotiate with the Rhode Island society, or any other similar association, for holding an exhibition next autumn.

RAISING LAMBS.

Wishing to compare his own practice with that of other breeders of merino sheep, Dr. Randall addressed a series of questions to quite a number of the leading farmers in New York and Vermont. We select from the *Rural New Yorker* the following summary of answers to these questions upon the following timely topics:—

Attention to Lambing Ewes.—It is scarcely necessary to specify separately the practices of each of our correspondents in this particular. Those having the most valuable sheep visit lambing ewes constantly during the day, late in the evening and early in the morning. Some visit them once in two hours during the night, and if a ewe is found about to yean, watch her until she has done so and the lamb is taken care of. The amount of attention required depends much on the state of the weather. Unless sheep are very tame and accustomed to see the shepherd and his light, it is much better for him to keep away from them in the night. Otherwise the lambs will be run over or separated from their dams in the resulting confusion, and young ewes will sometimes take no pains to look them up again; and young ewes frightened away or disturbed, soon after yeaning, are much more likely to disown their lambs.

Condition of the Udder.—All our correspondents but two express themselves in favor of examining the ewe's udder, at the time of lambing, to see what is its condition, and that the milk flows freely. The teat is often stopped at the lower end and requires considerable pressure by the fingers, wetted with milk or spittle, to force out what some of our farmers term the "plug." Mr. Pitts does not examine the udder if the lamb is strong enough to suck. Wilcox omits the examination for a few hours to avoid unnecessarily disturbing or exciting the ewe. These differences are probably rather apparent than real. If the lamb helps itself at the outset, sucking and obviously obtaining milk from both sides of the udder, and obtaining enough of it, no one would feel called on to interfere; if not, and especially if the weather is cold and the lamb betrays weakness, the examination would not be long deferred by any one. Our own views on the subject are fully given at p. 146 of the Practical Shepherd, and it is not worth while to take up room to repeat them here. We consider the objection to disturbing ewes *unnecessarily*, especially *young* ones, worthy of attention; for we have repeatedly seen a ewe with her first lamb, run away from and betray great indifference to it for some time afterwards, if disturbed while licking it dry. We would meddle with *no* ewe while licking her lamb dry, and while the latter was vigorously making its first efforts to suck, if in anything like a comfortable temperature.

First Milk.—One question to our correspondents was:—"If the milk is thick and gummy do you milk it out on the ground, or let the lamb take it?" Baker, A. H. Clapp, Gregory, Heyne, Pitts and Pottle have the lamb take it. Brown and Wright milk a little on the ground and then have the lamb take it. E. O. Clapp milks it on the ground if in abundance, if not, lets the lamb take it if it can. Elithorp milks it on the ground if very thick and gummy, so as to be difficult to draw, but if it comes easy lets the lambs take it. Hammond milks it on the ground and suckles the lamb on another ewe "until the milk becomes good." The Marshalls let the lamb draw it if he can. Rich milks it out once. Sanford, if it is quite thick, milks it out, but likes to have the lamb take it as soon as he can. Saxton first lets the lamb draw a little, and then milks out the bag clean on the ground. Wilcox lets the lamb take it if he will, but if not, after a few hours milks it out. Our practice has conformed to that of the Marshalls, which is substantially the same with that of Elithorp, Sanford and all those who say they let the lamb take it; for we suppose none of them mean to be understood that they draw it by hand from the udder and feed it from a spoon, or the like, to the lamb, if, as sometimes occurs, the milk has that thick, gluey consistency which renders it impossible to be drawn by the lamb. We do not think it well, however, for a weak lamb at least, to have a continued surfeit of this thick, first milk, if it physics it too freely. It is, as Mr. Pottle remarks, "Nature's cathartic." Few ewes continue to give it too long, but we have been instances of the kind.

The Consumption of Wool.—We learn from Washington that a statement made to the Senate Committee on Agriculture declares that the annual consumption of unscoured wool in the United States is little more than one-third of the estimate in the special report. It makes the total wool supply for the four years ending June, 1865, amount to 800,000,000 pounds, 300,000,000 of which were produced here, 279,000,000 imported, and 220,000,000 introduced as manufactured woolens.

☞ A company has been formed in Meriden, Conn., for the manufacture of hats by a machine which weaves them whole. Their capital stock is $400,000, and it took $75,000 to buy up the different patents used in the machine.

SCOTCH PINE---Pinus Sylvestris.

Most men, and all women, love trees,—and they love those trees, or shrubs, or plants best, that they have cultivated, or assisted in cultivating with their own hands. The person of taste who erects his house in a charming natural grove, though it may be made up of a variety of the most showy and graceful of our forest trees, is not content to stop there. He wants something before him that he has been instrumental in calling into being himself —something to which he has given thought, and labor, and affection, and which will still require his care, and will bud, and bloom, and exhale its fragrance or bear its fruit, especially for him.

It is this taste that has introduced into our garden and grounds so many beautiful trees and shrubs from our native forests, and so many of the exotics that grace and bless other lands. It was this taste that introduced the *Scotch Pine* into our collections of ornamental trees, a portrait of which embellishes the page before you.

This pine is one of the favorite European species, and as it succeeds remarkably well in this country, will be likely to become a favorite tree. It has many varieties, and they are very dissimilar. In favorable situations, the Scotch Pine will grow eighty or one hundred feet high. The leaves are glaucous, and in pairs; in young trees they are from two to three inches long, and do not drop from the tree until the fifth year. The cones open of themselves shortly after being gathered from the tree, and spread out in the sun. The seed should be sown on a finely prepared sandy soil, in March or April, and on land not entirely open to the sun.

We are permitted to copy our engraving from WARDER'S excellent work on "Hedges and Evergreens."

AYRSHIRE HERD BOOK.

The committee on Ayrshire Cattle appointed by the Association of Breeders of Thoroughbred Neat Stock, have made arrangements for publishing the second volume of the Ayrshire Herd Book. J. N. Bagg, of West Springfield, Mass., has undertaken its editorship, to whom all pedigrees, with a fee of fifty cents each, should be addressed till July next. Posterity rather than ancestry gets the benefit of a clean record. Every valuable calf should be registered at once, lest its origin be forgotten by the time its superior excellence shall give importance to the inquiry.

BEST KIND OF FOOD FOR PORK.—Mr. Willard says that while in England, the past season, he found it to be the universal opinion among those great meat producers where quality and excellence in meat production is carried almost to perfection, that no bacon was considered equal to that from dairy districts, where the feed was barley meal mingled with whey. By feeding barley meal with whey, the dairy farmers of England make their whey pay them in pork from $7 to $10 per cow—an important item, it will be seen, in any diary.

—The Canada *Farmer* mentions an exportation of apples from Oxford County, Can., to the English market at an encouraging profit.

For the New England Farmer.

THOUGHTS ON FEEDING CATTLE.

Mr. Editor:—I am embargoed at home by the great January thaw, which came a day too late, having began February 1st, and having nothing important to do except taking care of my stock, I thought I could not more pleasantly employ myself than by having a little epistolary intercourse with your many readers.

The thermometer shows us that since the 12th day of December we have had an uncommonly cold spell of weather; the mercury, often falling as low as 10° to 16° below zero, and hardly ever ranging higher than 20° above. We have had, in the fifty days ending February 1st, but one day that it thawed. Dec. 26th gave us a warm rain, that carried off the first snow, of about six inches, and from that time until the commencement of the *snowy week*, January 17th, farmers could not ask for a better time to cut and haul their year's supply of wood. Those who improved that time were wise, and cold as was the weather by the thermometer, the laboring man did not suffer, as he would, had it been more changeable.

The trouble with our climate is, the sudden changes in temperature. This is not only decidedly uncomfortable, when the mercury falls or rises 20° to 40° in twelve hours, but is productive of nearly all our lung diseases and complaints of a similar nature.

Until the 10th of December, the ground was not only bare, but open. I ploughed grass ground till the afternoon of that day, which was a thing I never remember to have done before, in the thirty-five years that I have carried on a farm. I have known occasionally two or three days in January that I could use a plough, but never a season that the ground was not closed earlier than this last.

But I am gossiping on matters of no great practical importance, whereas, when I set down, I had one in my mind that, at the present time, affects the pockets of every farmer owning and feeding stock, and in relation to it I write, as much or more to induce inquiry and thought on the matter, as from any information I can give from my own experience, for I take shame to myself in saying that I have not made accurate experiments to decide the question for myself. The question is this:

How much hay, or its equivalent in grain, is necessary to keep cattle in good thrift?

For answer, one farmer will tell me that he feeds his cattle three times a day; another, five; another, seven; and yet another, as often as he goes to the barn, which is at uncertain intervals, perhaps to-day three times, and to-morrow six.

Now, there must be a "golden mean" somewheres, and while we want milch cows to give a liberal mess and keep in good condition, and oxen to freely do their part of the winter's work, and the young stock to be continually gaining, we cannot afford to feed more than is necessary, while hay is selling at $35 per ton at the barn, thirty miles from Boston.

I believe that most farmers feed too much and too often. I have noticed that the lean man is the great eater. Set ten starved-looking men at one table, and ten sleek, fat ones at another table, and the first will eat one-third more than the last; not only once, but every day for a year. Why is this? I can't say for *certain*, but my *theory* is this: the lean, spare man eats, from habit, more than he needs, more than his digestive powers can properly dispose of, and this so injuriously affects the whole system as to keep him poor in flesh; while the digestive powers of the fat man, who eats sparingly, are kept healthy, and the nutriment is properly absorbed by the system. Reasoning by analogy, if this is true in man, would it not be so in beasts? I believe it would. That, when cattle are fed too often and too much, some of the food is wasted, and the digestive powers so overworked as to take from the thrift of the stock. Allow me to cite an instance or two in point.

A neighbor of mine, last winter, asked me what made his horse so poor, while, said he, I am sure I give him enough to eat.

How do you feed him? said I.

Well, I always fill his rack, when I feed my cattle.

How often do you feed your cattle?

About five or six times day; sometimes seven or eight, when I happen at the barn.

Do you feed all dry hay?

Yes, said he, I believe enough good hay ought to satisfy any horse.

Well, I answered, perhaps it had, but if you will feed your horse with cut feed, twice a day, mixing two or three quarts of meal with it, when you wet it, and not give him more than one-third of the hay in all, that you now do, you will be the gainer, by saving two-thirds of your hay, for the four or six quarts of meal, and your horse will be a greater gainer by the change than yourself.

But, said he, I don't have much for my horse to do at this time of year, and I haven't much corn to spare.

Corn, said I, at present prices, is cheaper feed than hay. Sell a ton of hay, and bring home the amount in meal. Use it, and you will thank me in the spring for my advice. I see, also, that you feed your cattle on meadow hay. This will keep life in them, but you want them to gain. Sell a ton or two of that, cut your hay and sprinkle on a little meal, and your cattle will thank you. At present prices of stock, you cannot afford to let your cattle stand still. Make them gain, for your own sake, as well as theirs.

My advice was followed in regard to the horse, evidently to his advantage; but it was too much work to do it for his cattle.

Another man, in an adjoining town, who has as *good*, if not a better team, than the next

one, feeds so little hay as to be hardly credible. Having three horses and four oxen, he told me the other day how little he had fed to them in three weeks. I think it was not more than fifty pounds each, per week, when they were constantly at work, hauling ship timber, though both horses and cattle were large. At the same time he fed liberally with meal, and kept his cattle gaining.

I was very much interested, Mr. Editor, in the account you gave, some two months ago, of your mode of cutting and mixing your different kinds of feed, but you omitted to state how often you fed, or how much your cows consumed per week. I believe if experiments could be made and published, of how much hay it required to keep the different kinds of stock, when fed uncut and dry, and how much when cut and fed with meal sprinkled on, it would be found that the last mode was far more economical than the first. In the mean time, till farmers have line upon line, many of them will cling to the old mode, saying that the olden times and the old ways were better than the present. Yours, for improvement,

L. H. HILDRETH.

So. Groton, Mass., Feb. 6, 1867.

For the New England Farmer.

CULTURE OF THE ISABELLA GRAPE.

Can anything new be said about grapes? Surely one would think not, if he read all or even half that is said of them, by those who are interested in selling vines. For when we see the wonderful variety advertised and highly extolled by one and condemned by another, the wonder is that any one knows how or what to buy. But in order, I suppose, to make a sure thing of it, very many purchase all the different varieties that are advertised. Then they think themselves in a fair way of supplying the nearest market with the luscious fruit, and in time intend to drown their customers with wine at a cost, as advertised by California and Ohio producers, of four to six dollars per gallon! When I am informed, imported wines can be bought for one-third, or half of that, surely the day is far distant when those who drink rum or whiskey will be induced to quit it for the more genteel wine, if such fabulous prices are to rule.

Why should there be a law forbidding over 6 or 8 per cent. on money-borrowing, while wine makers, and in fact many other kind of makers, demand from 50 to 500 per cent. profit, including butchers, bakers, grocers, &c. Think of the groans which escape the mouth of the sick, who are poor in purse, when the doctor says, "if you only have a little wine, whiskey or brandy, I think you may get about again," and their minds embrace the impossibility, all owing to their purse being so much weaker than the strength of the article demanded, a very little of which may save life and restore to health, if it were not owing to the exorbitant price asked for it, and made so by the accursed *Yankee* desire to die rich, even if it stopped the breath of hundreds of our fellow-beings to obtain it.

Every one cannot raise grapes, if they try; yet a great many more *can raise grapes* than what do. I wish it to be understood I am not referring to vineyard modes. I simply refer to raising two or three good varieties by those who have but a few rods of ground, on which a few hundred pounds of grapes may be raised as well as not for themselves and friends.

Now I propose simply to give you my experience of 16 years with the Isabella, said to be the most difficult grape to ripen, excepting one, in this latitude. My statement can be substantiated by any of my townsmen who have been on my premises in September. I think if my practice were followed by others, we should not hear so much of Jack Frost's destroying grapes, neither of the mildew, rot or blight, and "hopes long deferred," or destroyed, just as we thought in two weeks more we should have the pleasure, for once, of eating as many grapes as we desired, without costing 25 to 50 cents a pound!

My buildings face to the east, on which are trained two Isabella vines. From one I have taken, by weight, 500 pounds; from the other 300 pounds of merchantable grapes. On the south side of the barn I have two Isabella vines, which average 100 pounds each, and usually ripen about the middle of September. In my garden, trellised to the fence, and upwards 8 or 10 feet, I have 4 vines, all Isabella, which yield in proportion to the others; the whole of which take up little or no ground that could be put to any other agricultural use.

These vines are never pruned simply to please the eye of the passer by. In November, or first of December, I take them down, and prune thoroughly even to half of the wood if it is required; then they are coiled up and laid on the ground until spring is well opened, then with strips of leather and tacks they are firmly nailed to the house and roof, clean to the ridge-pole. Every branch is separated from 2 to 4 feet, if possible, and that, of course, is easily done if it is properly pruned out. I never prune a leaf or cheek a shoot in summer or fall, as my experience is, the bunches are the largest, and ripen the quickest where the foliage is the most dense, provided the branches or runners are separated from 2 to 4 feet. I am satisfied that these vines would often fail to ripen their fruit by the frost striking them, if they had been out in my fields. But when placed against a house or barn, the frost does not have a chance to injure them so early by 3 or 4 weeks. A wheelbarrow load of old barn manure once in two years, with a half bushel of ashes, about as often, spread around them, and a weekly washing of suds in hot weather, will, I am confident, force the vines to new wood, and large and luscious grapes, well and early ripened, will be the reward for our in-

dustry. I have not said as much as I should have liked to on this subject, but I fear I have spun it out too long already for your columns and your readers.

If it would be acceptable to you, I should like one of these days to say a few words about grape wine. SYLVESTER S. CHAMBERLIN.

Chester, N. H., Feb. 12, 1867.

REMARKS.—On the *third day of November last* we gathered and ate grapes from the vines of which our correspondent speaks. Much of the foliage on one or two of the vines was then upon them, and in quite a green condition. The grapes were thoroughly ripened, large and of delicious flavor. Frost had not touched the fruit, and only very slightly the foliage, if at all. Their location is on a high swell of land, where frost, we believe, never injures late planted crops of corn. We have had statements much like these of Mr. Chamberlin, from another correspondent, in regard to the culture of the Isabella grape, and hope this will influence a great many persons, having a suitable locality, to engage in the culture of this variety of the grape. One principal reason for this hope is, because the Isabella is one of the best grapes to keep—perhaps the very best—for winter use. A friend from Western New York informs us that he raises them abundantly, and that when ripe they are gathered, and packed in clean flour barrels, in layers of cotton, and that they are used by the family—children and all—with as much freedom as apples are used. These are kept in closets where the temperature is cool and as even as possible, and usually last until about midwinter.

For the New England Farmer.

"A PLEA FOR THE BIDDIES" ANSWERED.

In the weekly FARMER of Feb. 16, "Idex" desires to know, if a certain profit is obtained from ten fowls, why ten times that profit cannot be realized from one hundred, and twenty times from two hundred and so on indefinitely.

This is not a new question, and it often puzzles the novice and those who farm extensively upon the blackboard or paper; but the experienced readily see many reasons why, practically, in the poultry yard, the rule of three is of little account. Upon every farm and about every house with a small piece of land, a certain number of fowls may be kept at a trifling expense: for in warm weather they pick up most of their living from what would otherwise be wasted or lost. In roving about the fields, pastures, and gardens, and in scratching every nook and corner of the yards, stables, and buildings, they lead the life their instincts teach them, and they can be kept in the most healthy, productive and profitable condition. True, Biddy, in following out her ideas of right and prosperity, is at times provokingly mischievous; yet she more than compensates in the good she does in making havoc on insect life, and gathering up scattered food that would be lost, if not breed vermin.

In this free and inexpensive way, the largest portions of poultry and eggs are produced, and of course in markets supplied chiefly by those who raise at the lowest cost possible, must he compete, who keeps fowls upon so large a scale that all their food must be bought or provided for them. Were there no other difficulties, who could produce a dozen eggs or a pair of chickens at the least cost?

But suppose any farmer who now keeps twenty or thirty fowls, should increase the number by ten or five fold, will the profits follow in like ratio? The present small number is kept without much trouble or expense upon the gleanings and wastes of the farm, and is about all that can be thus supported; therefore any considerable addition of numbers must draw constantly upon the granary and must increase the cost of keeping per head and, of course, cause a like decrease of profit.

While a small number of fowls about a farm if not a pleasure, are not much trouble, a large flock roaming at will could not be tolerated; and with close confinement come other difficulties. Biddy's life now partakes of the artificial; she chafes under restraint, and manifests her ill feelings by being fretty and quarrelsome. Through her extreme modesty and secretiveness she dislikes to lay in the presence of others, or in another's nest, and when compelled to do so, she is inclined to be a little obstinate or indifferent about laying at all. From the busy, bustling body, that had an egg for nearly every day when running about the yards and buildings, under only partial restraint and indulged in her set notions, she becomes, after long and close confinement, lazy, walks idly about, willing to be fed by her mistress or master, but without a thought of repaying their kindness. It is true, some of biddy's whims can be overcome by care and ingenuity in the construction of her apartment; but it is doubtful if the bad influence of having large numbers together can be obviated.

The chief objection, however, to confining fowls is the great difficulty of maintaining their health. Did the same mortality prevail among sheep, horses, cows or hogs that always exist in large collections of poultry, keeping domestic animals would be discouraging indeed. Fowls are not fastidious in their taste, nor of cleanly habits; but they are subject to that universal law of nature, offensiveness and deleterious effects of their own excrements. After awhile the soil of the yards and

the coops themselves, send forth an effluvia which exerts its baneful, blighting influence and in some form causes diseases and deaths. These distempers and epidemics have always been the great drawback to every attempt to keep fowls upon an extensive scale.

I would not say, that by constant sweeping, cleansing and white-washing of small coops; by removing the old dirt and adding fresh to yards or changing their location, together with due attention to ventilation and proper food, tolerable health might not be maintained; but all this, with a large number of fowls, would require an amount of labor and care hardly warranted by the profits. One might almost as well attempt to make the atmosphere of a densely populated city as salubrious and invigorating as that of the country.

These, then, are some of the reasons why farmers who have increased their stock of poultry have not found the profits to increase in the same ratio. Where, then, are the anticipated profits of those who would make a large business of keeping fowls?

The same general conclusion may perhaps be deduced from all attempts to keep any other domestic animal upon an extensive scale. Nor can we fail to see in all this the wisdom of the Creator; for if the profit of breeding increased invariably with the increase of numbers, the business would be monopolized by wealthy individuals or rich and powerful corporations, and the pleasure, comfort and income the farmer now derives from his small flocks and herds would be swept away, and he would find himself totally unable to withstand such formidable competition. N. S. T.

OLD SOWS FOR BREEDING.

Some very successful hog-raisers use only young sows to breed from, thinking this course better than to keep them through the winter. A correspondent of the Boston *Advertiser* gives the following reasons for thinking the contrary course the better way:—

"In rearing swine and making pork there is a universal mistake among American farmers in breeding from young sows, before their physical system is developed. Until this time arrives, most of the food goes to the support of the animal's growth, therefore she cannot be as good a milker, or impart the same vigor of constitution to her offspring. We know by accurate experiment that an old sow's pigs are worth twenty-five per cent. more than a young sow's. They have more vigor of constitution, and make the largest and most profitable hogs. The reason why our breeds of hogs so soon run out and disappear, arises mainly from the erroneous practice of breeding from young sows. Therefore, instead of killing their best sows this fall, farmers should keep them over for breeders, and make pork of their young ones. In Europe, no farmer of any reputation thinks of raising pigs from young mothers, any more than of keeping a dry cow for milk; but old sows are kept for breeders until they are too old to be profitable in this respect."

AGRICULTURAL ITEMS.

—The statement is made that 200,000 Vermont sheep were killed for mutton last year.

—There are now in the State of New York more than five hundred cheese factories, using the milk of over 200,000 cows. From Herkimer Co., alone, 18,172,913 lbs. of cheese, were shipped last year.

—A correspondent of the *Mirror and Farmer* says, cattle are very little over half wintered on the first day of March, take the seasons as they average.

—The Agricultural College of Illinois, has been located in Champaign County. Other counties which bid liberally for the prize feel aggrieved by the decision.

—A State Fair of fine stock, mechanical, scientific and agricultural machinery and inventions, is to be opened on the first Monday of May, next, at Baton Rouge, Louisiana.

—Dr. Fitch, the State entomologist of New York, reports that the canker worm has been discovered in large numbers at Geneva and neighborhood. He recommends tarring the trees!

—Mr. V. M. Hubbard, of Rochester, North Hollow, Vt., whose stock, particularly his Spanish sheep, were mentioned recently by a correspondent, informs us that one of his ewes has dropped a lamb which weighed 13 1-4 lbs.

—A correspondent of the *Country Gentleman* says that the yield of potatoes in Salem County, N. J., has decreased in that section during the last twenty years, from 200 or 300 bushels per acre, to 50 or 75.

—Gardner B. Weeks, of Vernon, N. Y., Secretary of the American Dairymen's Association, solicits the communication of the names of all the cheese factories in the United States.

—A bill has passed the Lower House of the Legislature of Illinois, appointing a State Entomologist, with a salary of two thousand dollars per annum, and there is another before it providing for an Ornithologist.

—A correspondent of the *Western Rural* at Lawrence, Mich., says, "Most of the farmers here have hop-yards, or are intending to put out yards in the spring. They are busy getting out hop poles, which are in good demand; worth $4 to $5 per ton delivered."

—Mr. R. Dart, of Ripon, Wisconsin, says, through the *Country Gentleman*, that a dry cellar is the only place he considers perfectly safe for wintering bees in his climate. His cellar is dry, and 32 by 26 feet, will hold 110 swarms, with room for passage ways. He is wintering 81 swarms, and does not think the loss of bees would be over a

quart from the whole stocks up to this time. His bees consume more honey from 20th of March to 20th of May than they do from November 1st to 20th of March, in his cellar. He does not carry his bees out of cellar, before middle of March. He does not feed his bees while in the cellar, nor disturb them in any way. Does his feeding in the fall.

—A farmer on the prairies of Southern Wisconsin informs the *American Farmer* that rabbits are increasingly numerous on those prairie farms, and very destructive; and strange as it may seem, wild geese in large flocks are great depredators in the corn fields in the fall, and on the wheat fields in the spring.

—The *Tribune* says that W. S. Carpenter, of New York, has transmitted to the Paris Exposition, one hundred and fifteen varieties of Indian corn, each of which has a name. The most remarkable ear in this collection contains 1,290 grains, arranged in twenty-two rows, and is known as the "Western Gourd seed."

—According to a statement in the Wisconsin *Farmer* the Colorado potato bug is moving Eastward at the rate of 25 or 30 miles a year. The line of march, somewhat crescent shaped, had reached Madison, Wis., last summer. Dr. Fitch estimates the Eastern progress at fifteen miles per year.

—A correspondent of the *Country Gentleman* says that a chilled lamb requires a greater degree of heat than is usually supposed. He places them near or under a stove that heats the zinc so that you cannot hold your hand on it, with a good fire on, so that the heat from stove is uncomfortable to your hands as you turn and handle the lamb.

—A correspondent of the *Rural New Yorker*, who tried the horizontal method of training hops with short poles, on ten acres last year, is now substituting long poles. He says the labor of training the vines is very great, as they will not run an inch around a twine horizontally, and when grown in that way the vines are so thick and shaded as to lessen the crop and increase the labor of picking.

—The *Maine Farmer* says that H. G. Abbott, of North Vassalboro', has for several years been making experiments in sheep-rearing, in the effort to obtain a medium breed between the Spanish and natives, so as to combine a good quality of wool with good mutton, each point being about equal in value. He has succeeded in producing a flock of very fine appearance and quality.

—Mrs. Tupper, of Brighton, Iowa, says that she has wintered her bees successfully for six winters in a dry and moderately warm cellar, where the thermometer usually is about 20° above the freezing point. Here they are perfectly quiet, not a sound comes from them; they seem to remain torpid. A hive weighing 60 pounds in the fall of 1863, wintered out of doors, weighed only 15 pounds the 1st of April, while twenty kept in the cellar the same three months lost on an average only five pounds each. Again, six hives wintered out of doors lost an average of 29½ pounds each in three months, while twenty in the cellar the same length of time lost an average of only 5¾ pounds.

—The California Agricultural Society requires that a first-premium work-horse shall be between fifteen and sixteen hands; quick, lively ears; broad between the eyes; round barrel; short loins; well up in the shoulder; deep chested; square quarters; flat legs; short between the knee and pastern, and hock and pastern; hind legs well under him; speed equal to eight miles an hour on the road, and at least three miles at the plough; with sufficient blood to insure spirit and endurance.

EXTRACTS AND REPLIES.

LICE ON PEAR TREES.

I have at last discovered what I have long been looking for in the FARMER, viz: a remedy to destroy lice on young pear trees. To a pail full of warm water, put a handful of whale-oil soap, stir it until it is dissolved, and when cold, take a brush,—an old shoe brush is just the thing, as the bristles must be stiff,—and brush the trunk and branches and you will be rid of the lice. The trees will thrive and look healthy. Even as a fertilizer, the soap and water will pay. The best time to use it is on a spring morning when the bark is covered with moisture. F. WEIS.

Dorchester, Mass., Feb., 1867.

REMARKS.—From frequent personal notice of Mr. Weis' fruit trees and currant bushes, we know that he has good success in their culture, and our readers will appreciate the information he imparts regarding the bark-lice. Mr. W. will understand that we are always glad to receive practical hints on any subject pertaining to agriculture or horticulture, and if he does not find so many such as he would like in the FARMER, it is simply because our practical readers neglect to impart the secret of their success.

THE CORN CROP.

The large amount of land in Massachusetts, lying almost useless, and the high price of corn, tempt me to write. A few make money on vegetable farms. The same men might grow corn to a profit, had they the trade as well learned as they have that of raising garden vegetables. A man in the prime of life, with one hired man for the eight summer months, will be able to do the work on a farm, large enough to raise from six to eight acres of corn, with a proper proportion of barley, oats, potatoes, and roots sufficient for the necessities of the stock; allowing a proper rotation of crops, his hay crop may be abundant; his loam and muck deposits, with proper and careful management, will supply the needed balance of manure.

One yoke of oxen, and one horse, will do all the work on such a farm, if properly used, and the tools used are of a proper make.

One advantage of this system of operations is, the men have all the time for work, through the day, and the night for rest; whereas, on the market farm, several hands are necessary, and a number of horses required to transport the crop to a market. Much of this is done in the night time, which adds to the wear of both man and beast. Farmers and gardeners! please discuss this sub-

ject in all its bearings, and let us come to a just conclusion upon a matter that has a direct bearing upon all classes of citizens in a New England community.

An item of much importance in growing corn, is to have *seed* that can be depended on. Some years, (and the last was such an one) corn does not ripen well in the field, and much of it will not germinate. We should, therefore, be on our guard and note carefully what we plant. Examine the corn before and after it is shelled, and you can judge very accurately as to its quality. In selecting corn for seed, do it on the cob, then you may get that which is perfect. An ear of corn with ten rows half the length, and eight the other half, is not perfect; neither is it quite right if the butt end is scattered, and none should be planted except the tip is covered with kernels. When such ears are found, then plant the whole corn found on the ear.

The manner of planting corn, and going through the whole process has much to do with the profit of the crops. The writer might particularize his method, but it would be but one among many modes practiced. Now it is a fact that many fields of corn do fail to pay, on account of mistakes made in the labor expended.

Would the farmers in every town meet together, *lay aside prejudice*, and discuss matters relating to their business, much might be learned that would be beneficial. ROBERT MANSFIELD.

Wellesley, Mass., Jan., 1867.

MELONS AND SQUASHES—COMPOST.

MESSRS. EDITORS:—In answer to the request of "F. W. C." of North Oxford, Mass., through the N. E. FARMER of Feb. 23, I will, with pleasure, reply, briefly, as follows:—

As to seed, I have planted the long, dark green melon with black seeds, from the south. They have grown larger than any other kind I ever raised; weighing between twenty-five and thirty pounds. They have been called "very nice," by my friends, and I could not dispute their judgment. I prefer seeds two or three years old, for early maturity of melons; although seeds but one year old will come up quicker.

The very best that I have raised, and weighing from ten to fifteen pounds, were a long, light green, with red seeds; brought from the south two years before. These had less waste, and were more delicious than any other kind raised in my ground.

I never save the seeds of any unless they are first rate of their kind.

Water melons want a rich, light soil, porous and hot—no matter how hot—to be very good. A strong, heavy soil may produce large ones, but not often very good ones.

After the ground is right in other respects, I dig holes for hills nearly the size of a bushel basket, and put in the bottom from a peck to half a bushel of compost, having not more than six hills to the square rod, and leave not more than 4 or 5 vines to mature in a hill.

For Marrow or Hubbard squashes I would like a stronger, but always a warm soil, and, like that for melons, the whole surface supplied with food for the joint roots; then holes for hills the same in size, but not more than four to the square rod, and not more than three vines to mature in a hill. The seeds I would wish to be more than one year old. I always select seeds from the very *best*; not from any merely because they are large; having a greater preference for the good than for the great. Yet I do not despise greatness, except when it is mean.

Every kind of garden product, I think, is better when it makes a quick growth.

I fix my compost in the Autumn, when possible, for such things, and find water melons for August and September and Marrow squashes for winter, cheap and excellent food for cows, as well for the laughing and singing accompaniments of farmers and gardeners.

For a compost, take night soil, with from a quarter to half the quantity of plaster, from four to eight times as much of charcoal dust, or dry and pulverized muck, or a mixture of them, and if they cannot be had put the amount of rich loam to which some caustic lime or hard wood ashes has been added to destroy acids. Work it well together after it has lain mixed in layers through the winter.

If the compost is not mixed until near the time of application, I like to put some strong ashes or caustic lime, or both, on the compost in every hill, before filling up the hole. I wish to have the compost at least four inches below the seed, and that to be filled with rich, active, surface soil.

If these ideas may serve squashes, and those who love them, and make melons more desirable and more abundant, I shall be satisfied, and wish all prosperity to the printer as well as the gardener. A. G. C.

Lee, N. H., March, 1867.

EFFECTS OF BREEDING IN-AND-IN.

I have a high grade Suffolk sow, which recently brought forth a litter of thirteen pigs. Only nine survived the trials of pighood. Of these, two were found to be of doubtful gender,—hermaphrodites. Some of my neighbors advised me to kill them, thinking they would be valueless. Curiosity led me to spare them. Thus far they have done as well as others of the same litter. What the flesh will be, I shall not know till they are butchered.

But the cause of this freak of nature is what interests me; and thinking that it may interest other stock breeders, is the reason of my writing.

I have no doubt that a violation of the laws of animal life, was the procuring cause.

If I mistake not, we had it from quarters which we are all accustomed to respect, that there is no harm in breeding in-and-in.

To me, it seems so obviously opposed to reason and Scripture, that I wonder any believer in both, or even one, should doubt.

The present condition and past history of royalty, in all monarchical countries, settles this question beyond all doubt.

To what else is attributable the notorious fact, that the palace is more often filled with dwarfs and idiots than the peasant's cottage? that the offspring of blood relatives are proverbially sickly dunces? that farmers who disregard this law, are never successful in stock raising?

I have learned since this development named above, what I knew not before, that the mother and the pigs are indebted, for their origin, to the same paternal head.

This is the fourth litter I reared by the same mother. All of the first three families were strong, healthy and *proper* grunters; so much so, as to command any extra price. From this I infer, that the laws of generation, like every other law of nature, must be observed or the penalty will be exacted. R. H. H.

MY EXPERIENCE WITH BEES.

Two years ago this spring, I purchased a swarm of bees. The first year they swarmed twice during the month of June, and made about two pounds of honey for my use. The hives were wintered in the chamber of an unoccupied house, and came out strong and healthy in the spring; but the season was very unfavorable for bees, in this section, and I had only one swarm, (the only one I have heard of in our vicinity.) On weighing the hives in the

fall I felt sure that it would be best to try to winter only two swarms, and so two were taken up. The rest were put in a dark closet above the kitchen. About the 20th of January I examined them and found them all dead. In one hive the honey was all consumed, and in the other there were about four pounds. The hives had been turned bottom upwards to allow the moisture to pass off, as recommended in Langstroth's work on the honey bee, and perhaps the occasional jarring in the room below caused the bees to go *up*, and then they didn't think of going *down* for the honey. I hope no one will be discouraged by my experience, for I think two of the hives, at least, might have been saved by liberal feeding in the fall, and as it was, I lost nothing but my time, for I got honey and wax enough to cover first cost. I think by my own observation and what I can learn from others in this section, that the past season has been the most disastrous to bees of any on record, for a long time. I mean to try bee-keeping again, and expect better success. SELRAHC.

Worcester Co., Mass., Feb., 1867.

REMARKS.—We admire the pluck of our correspondent. Instead of being disheartened by his partial failure, he has the courage to make it the subject of his "first attempt at writing for a newspaper." As a general thing, agricultural writers are too much indisposed to report unsuccessful experiments.

FLOUR OF BONE.

If any one who used the Flour of Bone, the past season, has derived any benefit from its use, I wish they would just say so in the FARMER. I think this would increase its sale more than any other kind of advertising. I have tried it on corn with little benefit. It did not pay. I put about a gill of this flour of bone, manufactured by the Boston Milling and Manufacturing Company, on a hill, previous to first hoeing. Either I did not apply it right, or the soil or climate, in this latitude, is not agreeable to it; or the season was unpropitious; or some unknown cause counteracted its good effects; or it was worthless. What I received was not so fine as I expected from the name. Much of it was in pieces as large as beans. I have purchased ground bone before much finer; albeit the name was not so fine. I once used Coe's Superphosphate, and it nearly doubled my crop of corn. But it is said that it this sometimes proves worthless.

Derry, N. H., Jan. 4, 1867. E. B.

TRANSPLANTING TREES.

Is February a good month to transplant evergreens, elms, maples, &c., on a sandy soil, by taking up with them a large ball of frozen earth?

Castleton, Vt., 1867. D. W. P. FINEL.

REMARKS.—Yes, Sir, and every one of them will be likely to live, if the work is well done. Secure the large ball, and when it is placed in the hole where it is to remain, pack under it and all around it with rich soil, leaving no air-holes and spaces for it to rock about. An elm now stands before us, two feet in diameter and about 40 feet high, which we set in a winter day when the mercury stood at *nine degrees below zero!* Do the work well, and you have no trouble.

A NEW HAMPSHIRE FLOCK OF SHEEP.

In the winter of 1866, I kept a young buck with 10 ewe sheep. He was put with the flock October 1, and continued with them. In January, I was offered for the ten ewes $60, but I did not sell, and in the month of March they dropped fifteen healthy lambs, one of which, by an accident in the barn, was injured and died. I fed my sheep with meadow hay till the first of February, then on clover till pasturing time. My sheep had no grain or vegetables of any kind. The lambs I commenced feeding as soon as they would eat meal, giving them two quarts per day, upon an average, till turned out to pasture. On the 20th day of June I sold 10 out of the 14 lambs for $30, and the last of July I sold 3 more for $12, which left me one ewe lamb. The sheep were all natives but one, and that a Canada ewe. The exact weight of wool I cannot give, but it was about 40 pounds, worth 50 cents:—

10 lambs	$60.00
3 do	12.00
40 lbs wool, at 50c	20 00
1 lamb left	3.00
	$95.00

My buck died in the pasture in July, and in September I purchased another young one which is now with the same 10 ewe sheep. My little flock have eat nothing but meadow hay as yet.

A SUBSCRIBER.

Kingston, N. H., Feb. 16, 1867.

HOW TO FEED CALVES AND HEIFERS.

I wish to inquire the best way to feed calves, say from five to twenty months old. I am feeding such with the best of hay, but I want to know if a little meal and shorts will do any harm? Some farmers say they will, and some that they will be an improvement. I am feeding half a pint of meal and three half-pints of shorts per day, to a heifer ten months old. A. B. CARD.

Centredale, R. I., 1867.

REMARKS.—You are feeding judiciously, in our opinion, and your heifers will pay you liberally for such care. The truth is, that many of our calves and colts get a "stunt" while young, which they do not recover from for years, if they ever do. A perfect animal can never be obtained unless its wants are liberally supplied, in regard to food, shelter, and comfortable accommodations. Some animals are fed well, but are so cramped for room that, like a vigorous tree in a stone wall, they can scarcely grow without pushing the barn over. Others are fed well, but are so exposed to cold and storms that they grow very slowly, or yield little milk.

A too liberal use of grain for young animals is undoubtedly injurious. No farmer of good judgment need err in this particular.

SPECIAL MANURES.

There is so great uncertainty regarding the fertilizing value of most of the special manures, now-a-days pressed upon the attention of the farmer, that it would seem wise—though I don't know as it could be done—to have a Board, either appointed by the Legislature of the several States, or otherwise, to examine most thoroughly, and report after a proper test, upon their actual value to the farmer.

We all well know what fortunes are made by the manufacturers of these articles of commerce; how extensively they are advertised, and how almost every means is exhausted to induce us to give them only a single trial. But in many instances this "single trial" makes quite an inroad into the farmer's pocket, who usually has the satisfaction of knowing that he positively *earns* his money.

My attention was called to this subject by perusing one or two articles, in a late number of the FARMER, in which quite unsatisfactory results are recorded. Now, is there no remedy for all this? and must we continue to be thus imposed on?

Salisbury, Ct., Feb. 10, 1867. W. J. P.

REMARKS.—We very much doubt whether any Board would afford us much protection. Manufacturers in England are accused of furnishing a different article for the inspection of Assayists and Boards from that which is offered in the market. "Where there is a will there's a way" in cheating about manures, as well as in other things.

POLYPOD BRAKES.

I have a meadow which bears a good burden, but a great portion of it is a kind of brake, known here as Polypod Brakes, which cattle will not eat. I wish to inquire, through the FARMER, how I can kill them, and get the meadow into good meadow grass? I have flowed the meadow for several winters, and find that it improves it some, but does not kill the brakes. A YOUNG FARMER.

REMARKS.—Thorough drainage would undoubtedly cause the brakes to disappear. Plowing, manuring and cultivating, would render the drainage more effectual.

LEACHED ASHES.

We are often asked what is the value of leached ashes, compared with that which is unleached. Leached ashes is supposed to retain, after the ordinary process of leaching, about 33 per cent. of the potash which it contained before it was leached. But its whole value does not consist in this. There is more or less lime and silex in it, either uncombined, or in the form of silicate of lime, both of which are valuable fertilizers, especially for the grasses. Then, a careful examination discovers a considerable percentage of charcoal, in the form of small particles not completely reduced to ashes. This is valuable.

Potash has a strong affinity for nitric acid; a small percentage of this exists in the atmosphere. It is supposed to be formed by the action of electricity upon the atoms of nitrogen in the atmosphere, causing them to unite with the oxygen, the other constituent of atmospheric air, or with the oxygen of water which is ever present in the form of watery vapor in the air, and form nitric acid. This is brought down by rain, and especially by snow, and unites with the potash contained in the ashes, forming nitrate of potash, or saltpetre. A portion of this is always found in leached ashes that has been exposed to the action of the air, and adds much to its value.

A similar affinity exists between lime and nitric acid. Hence the plastering on old walls becomes impregnated with nitrate of lime so that when ground it is a valuable fertilizer. It is said that in China a man will put a new plastering on an old wall, and consider himself paid by having the old for manure. We think that the charcoal, lime and nitrate of potash added to the 33 per cent. of retained potash, render leached ashes worth about half as much as unleached, and that it will always pay to purchase it, at about half the price of unleached ashes. R.

Concord, Mass., March, 1867.

WHEAT-GROWING IN VERMONT.

In reply to Inquiries by Caleb E. Parmenter, of Attleboro', Mass., I would say that wheat-growing in Vermont is getting to be good business. Farmers are waking up to the importance of raising their own breadstuffs. When they call to mind the price of flour they begin to exert themselves to raise wheat. Whether winter or spring wheat is sown, depends on the soil and location. Winter wheat does best on dry soil, so located that the snow will not drift so as to lay on it late in the spring, causing it to winter or spring-kill. The land should be in a condition to produce corn. The best kind of winter wheat is the White Flint, as it makes the best flour and yields well. The best kind of spring wheat raised in this vicinity is the Canada Club, which grows in all locations—in the valleys and on the hills. A few years ago farmers thought they could not raise wheat on the Connecticut River; and in fact they could not, until they obtained the Club wheat. This variety can be obtained almost any where in Vermont. It will be useless for me to give directions in regard to raising winter wheat, although I will say it should be sowed in August, so that it can get a good growth before winter sets in. WILLIAM ALLEN.

North Hartland, Vt., March 11, 1867.

A BARN CELLAR.

I am planning to put a cellar under my barn. I want a receptacle for the manure under the stable, and the same size, 12 by 30 feet, that shall be tight, so as to hold the liquid as well as solid droppings. Can it be done, and in what way? D. L. T.

Marlboro', N. H., Feb. 27, 1867.

REMARKS.—Yes, sir, in several ways. You can cement it, as is frequently done for both barn and house cellars.

You can pave it with flat or small stones, laying them in clay, instead of sand.

Or, you can pave it *with clay alone*, so that it will not leak or be cut up readily by cart wheels, when backing in.

First, make the bottom smooth. Spread the clay on one side, one inch deep; then pound it down with a stake sufficiently long and large to work easily with. The bottom of the stake should not be more than two inches square. When this is rammed so as to appear almost like stone, add another inch, and so go on until you get the bottom covered with clay to the depth of three or four inches. If the clay is too dry to set and stick when struck, sprinkle *sparingly* with a fine waterpot. If you do it well, in this way, you will have a cellar bottom as tight as a bottle, and one easy to shovel on. It would not answer, however, to keep a lot of hungry hogs on. We made one nearly twenty years ago, which is in good order now.

WHEAT CULTURE.

I would say in reply to the inquiries of Mr. Parmenter, in the FARMER of March 9th, who wishes to learn more in regard to wheat raising in Vermont, that in this immediate vicinity we raise spring wheat, almost exclusively; and the variety that has been most popular for a few years, is a kind of "black sea wheat," recently imported by an officer in the Crimean war. It is bearded, and has a very heavy growth of straw. The millers say the skin of the berry is very tough, so that it is almost impossible to grind any of it into the flour, and hence the flour is very pure and of a superior quality. We think it has proved more "sure" of producing a good crop than any other variety. It is hard to thresh, and seldom gets threshed so clean that the stock fail to find kernels enough,

while eating the straw, to keep their courage up; yet what is threshed measures up satisfactorily, averaging from 20 to 40 bushels per acre.

The berry is not quite so plump and fat as some other varieties, and some think the straw is not so stiff as it ought to be; but I rather think it would be as stiff as other kinds, if it did not grow any longer, or produce more tons per acre. It is now selling here for $3 per bushel, for flouring, and pure, selected largest kernels only, and cleansed, could probably be obtained for $3.50 per bushel, for seed, by the barrel.

Our mode of culture is almost precisely as described by Mr. Hutchins, in the same paper. I sow it the second year from the sward.

RUFUS NUTTING.

Randolph, Vt., March 9, 1867.

CATTLE CHEWING BONES, &c.

I should like to know if you or any of your subscribers can tell what will cure cattle of chewing bones and bits of boards? I have tried salt, ashes, lime, plaster, flour of bone, and pieces of old mortar, but they do not stop the habit. If you can inform me, you will oblige a subscriber.

Holliston, Mass., Jan. 24, 1867. R. P.

REMARKS.—This bone question is somewhat of a vexed one. It will be easier, we think, to say what will *cure* it, than to say what *causes* it.

Some impute it to a want of salt; that cannot be, for cattle chew bones that have constant access to salt, are fed on salt hay partly, and even live directly on the sea shore. We have seen a case recorded, where about 40 head of cattle were nearly rabid all winter with this morbid appetite for old bones, pine boards, &c., although the farm was washed by salt water, and the cattle were fed half the time with salt hay.

The *cause* of this appetite seems to us to lie in the great change from an abundant, succulent and nutritious food, open air and exercise, to dry food and confinement.

The *remedy* must be, first, in cultivating the land with a proper rotation of crops, so that the grasses and grains will prove sufficient to produce, in growing animals, all the parts belonging to them, such as hair, horns, hoofs, wool and bones.

Second, give animals an opportunity, at all seasons of the year, if possible, to come to the bare ground, for an hour or two at a time. We well remember how eager the oxen were to lick the furrows when we first began to plow in the spring, and how voraciously a horse would sometimes eat half a pint of the soil, and if let loose, roll and rub himself in it, with more delight than a group of boys would roll themselves in a lavender bed! If the ground is covered with snow, manage to preserve some earth from freezing, and place it about the yard, a quart in a place, several times during the winter.

Third, where evergreens are abundant and handy, it will be economical to lay them before the neat stock and colts, as well as the sheep.

Cribbing horses, and those that merely gnaw their mangers, may be cured by allowing them the freedom of a little yard in the open air, access to the ground, and a *variety* in their feed.

All our stock need a variety of food in the winter. A mess of roots daily, and a little grain, added to hay and corn fodder, would be quite likely to stop bone-chewing.

At the same time, if an animal will eat bone meal, give it to him, as much as he will take; if the meal is not at hand, break the bones with a sledge or hammer, as fine as you can. Give salt frequently, be regular in the time of feeding, keep the barn clean and *sweet*, and there will not be a general habit of chewing bones, though occasionally a single case may occur with cows in calf, or those who have just dropped them.

HOW TO DRY BEEF.

I wish to inquire through the NEW ENGLAND FARMER, the best way of preparing and drying beef? A SUBSCRIBER.

East Abington, Mass., 1867.

REMARKS.—The best dried beef we ever ate was at the table of E. D. Rust, Esq., now of Brandon, Vt., and was prepared as follows: For 100 pounds of beef make a brine of nine pounds of salt, two pounds of brown sugar, one quart of molasses, two ounces of saltpetre, two ounces of saleratus. Mix them well together in water, then boil and skim. When this is cool, pour it over the meat, being careful to have every particle of it covered with the brine. Let the beef remain in the brine until the seasoning has struck through it, then take it out, wipe it dry and hang it up. Some persons hang it overhead in the kitchen, for a week or two, and then in some place more out of the way. When sufficiently dried it may be inclosed in bags so tight that no insect can enter, and kept in a cool, dry place. If desired, it can be smoked for a day or two, or longer, as hams are smoked.

STEAMING FOOD FOR CATTLE.

Will you give me your opinion about steaming food for cattle? I have more coarse fodder than good hay, and should like to know the best way to feed it. WM. HOWLAND.

North Dartmouth, 2d mo., 20th, 1867.

REMARKS.—Steaming food for cattle is profitable, no doubt, if a large stock is kept where fuel is moderate in price, and where one can have a systematic and somewhat skilful person to attend the operation of steaming.

The next best course is described in the weekly FARMER of Nov. 10, 1866, a copy of which we send you.

WEATHER—SUGAR-MAKING—SCARCITY OF CATTLE PRICE OF HAY—SNOW DRIFTS.

Another winter has gone, and another spring comes *Marching* on. Now and then a solitary blue bird is heard sounding its notes on the adjacent hills, but the prospect is that we are not yet done with Jack Frost. For a week past the weather has been warm and spring-like, but now it has changed, and winter seems to be struggling once more for the mastery.

The farmers up here on the hills are making active preparations for the sugaring season, and they expect a generous flow of saccharine fluid.

There is a great scarcity of cattle, most of them having been sold the fore part of winter; many far-

mers being unable to keep them on account of having a small crop of hay. Hay brings thirty dollars a ton, and still has an upward tendency.

The snow has not entirely taken its departure; in some places there are yet drifts from fifteen to twenty feet deep. CHIEL.

Shelburne, Vt., March 4, 1867.

BEES LOST IN SPRING.

In reply to a correspondent who inquires for some means to prevent the loss of bees in the spring, which sometimes almost blacken the snow in front of the hives, we copy the following directions from Mr. Quinby's Work on Bees:

"To prevent their leaving the hive at such times, a wide board should be set up before it, at least as high as the entrance in the side, to protect it from the sun. But if it grows so warm that the bees leave the hive when thus shaded, it is fair evidence that it will do to let them sally out freely, except in case of a new snow, when they should be confined to the hive.

The hive may be let down on the floor-board, the passage in the side covered with wire cloth, and made dark; raising at night again, a little for ventilation.

It has been recommended to enclose the whole hive by a large box set over it, and made perfectly dark; with means for ventilation, &c. For large families this would do well enough, as would also some other methods. But I would rather take the chances of letting them all stand in the sun, and issue at pleasure, than to have the warmth of the sun entirely excluded from the medium sized families."

INCOME FROM A HEIFER.

I have a four-year-old heifer that calved the first of last May, and comes in again the first of April next. In ten months she has given sixteen barrels (2048 quarts) of milk. The calf was sold for eleven dollars. Now, suppose I had sold her milk for six cents per quart, it would amount to one hundred and twenty-two dollars and eighty-eight cents, making, with the calf, the sum of one hundred and thirty-three dollars and eighty-eight cents, for the use of one cow for ten months. I do not make the above statement because I think my heifer is better than many owned by my neighbors, but because I think we are not aware what a noble lot of milk, butter and cheese we get from one good cow in a season, besides all the sour milk for the hogs. J. L. R.

Epping, N. H., March, 1867.

GOOD ADVICE.

I was much interested in an article, page 22 of the January number of the Monthly FARMER, entitled, "Shall I sell my little Farm?" A reply to it contained much that had both wit and wisdom in it.

The choice of occupation for the young has always had a kindly consideration in your journal, and it was never so much needed as now. I trust you will yet urge that we do not all join in the rush for South or West. Indeed, those of us who are not under the influence of some mania, are fortunate. I would use all my influence with our present "well-offs," to adhere to the farm.

J. H. C.

A GIRL'S BIDDIES.

A kind neighbor lends me the NEW ENGLAND FARMER to read, in which I take a great interest, especially in the Ladies' Department. Some of the receipts I have tried, and like them very much.

As I have been much interested in what one and another have said about their hens, others may be interested in a brief notice of my five biddies during the past season, one of which brought up a brood of chickens. They were kept shut up most of the time. I gave them all the crumbs and scraps of meat from the table, and kept bones and shells pounded, by them. They commenced to lay in February, and laid sixty dozen eggs. Two pullets have been added to the number this year, and they commenced to lay in January, and laid 8 dozen eggs up to March 12. P. A. P.

East Brookfield, Mass., March 12, 1867.

KEROSENE OIL.

We bought a pair of oxen a short time since, on which we found lice. Were advised to apply kerosene oil, which killed all the vermin as far as it went, for it has taken the hair all off and enough of the skin, we should think, to take the roots, too, leaving the flesh sore. S.

Guilford, Ct., March, 1867.

For the New England Farmer.

BOMMER MANURE.

MESSRS. EDITORS:—Will you give us Bommer's method of preparing manures as it is now open to the public, and also tell us which is the best book that treats on the cultivation of small fruits.

A NEW FARMER.

REMARKS.—About thirty years ago a gentleman in France by the name of Jauffret invented and patented a process for *composting*, or making manure of old straw, hay, weeds, or any coarse vegetable matter, by inducing a rapid decomposition, &c. The following synopsis of the French patent was prepared and published by us several years ago.

Jauffret's plan was to form a tank or reservoir for water, saturated with decomposing animal or vegetable substances, which may be found on almost every farm. This may be composed in part of drainings from the barn-yard, soap-suds, sink water, urine, &c.

A ley is then prepared in a vessel, or small tank or pit. In preparing this ley, it is better to take the drainings from a former heap, or for the first time take liquor from the reservoir, or soap-suds, sink water, and other liquids rich with vegetable or animal matter.

To decompose one thousand pounds of dry, vegetable substances, or twice that weight of green materials, add to the liquor in the vessel, or small tank,

200	pounds of	night soil, or twice that quantity of horse, cattle, sheep or swine manure,
50	"	" wood soot,
50	"	" unleached ashes,
200	"	" plaster,
30	"	" quick lime,
1	"	" common salt,
1	"	" saltpetre.

These ingredients may be varied; and it would be an improvement to increase the quantity of quick lime and ashes, and reduce that of plaster. If these materials cannot be conveniently obtained, others may be substi-

tuted. For the soot, use a larger quantity of the burnt earth of coal-pits. For plaster, use a larger quantity of street manure, slime from ditches, or other similar manure. For ashes, use five or six pounds of potash or soda. Stir the liquor, on adding the plaster, and throw in a little at a time, lest it cake.

The materials for manure are thrown into the reservoir and soaked in the liquor, to prepare them for decomposition. Then they are thrown into a heap, by the side of the reservoir; a place for which should be prepared by laying at the bottom clay, or compact earth, so that the drainings from the heap, and the ley poured on the pile, may run off into the vat, and not be absorbed by the earth, as it would be on a porous soil.

The heap may be made six or seven feet high, six, eight, or ten feet wide, in order to hold the heat, and of any convenient length. In forming the heap, after making layers of about a foot, turn on some of the ley, that it may be applied to every part of the materials. When the heap is completed, turn the muddy sediment of the ley on to the heap. Then cover the top of the heap with straw, old planks, or branches of herbage. In forming the heap, it should be trodden down to make it close, and it should be beaten all round for the same purpose.

The fermentation usually commences in two days, and on the third day, the top of the heap is to be opened about six inches deep, the sediment turned over, and another good drenching of the ley applied, and the heap covered up. About the seventh day, make many holes in the heap, about three feet deep, and give another good drenching with the ley. About the ninth day, another good drenching, in new and deeper holes.

After fourteen or fifteen days from the making of the heap, the manure will be fit to spread. The fermentation is checked by an excessive drenching, or by opening the heap. The drainings should be caught and used over again, and what remains is used for future heaps. Warm weather is most suitable for making this manure.

In 1843, a man in this country by the name of Bommer applied to H. L. Ellsworth, then Commissioner of Patents, for a patent for making manure which was for want of novelty rejected, as it was virtually the same as Jauffret's plan. Subsequently an application for a patent for an improvement on the French process was obtained by Mr. Bommer, whose name has thus become associated with this subject. With how much justice will be seen by the following specification of his claim.

"What we claim as our improvement on Jauffret's method of forming manure by the rapid fermentation of vegetable fibres, is, first, the forming of the said vegetable matter into piles or heaps, without its first being immersed in the prepared ley, and the subsequently saturating the same by pouring on the ley in the manner set forth."

In relation to the second request of our correspondent, we may say that all the books published on this subject contain much valuable matter, but for a cheap work we have no hesitation in recommending Cole's Fruit Book.

For the New England Farmer.

NOXIOUS ANIMALS, INCLUDING INSECTS.---NO. III.

BY I. B. HARTWELL.

A common objection to what has been written in reference to noxious insects is, that while we get therefrom perhaps a long Latin or Greek name, and an elaborate scientific description and history of some species, we obtain few infallible preventives of their injuries.

It is indeed true that neither the scientific nor practical entomologist can often give us the infallible remedies we want; but that which they do give us is not only highly interesting to every lover of nature, but affords us the only means of seeking intelligently for preventives of insect injuries.

And, perhaps, still stronger objections will be urged against any attempt to prove the utility of that which is noxious, or the necessity of that which is unnecessary. Nevertheless there are some questions about the mission of animals, including insects, commonly called noxious, that are not yet fully exhausted or satisfactorily answered.

Every form of animal and vegetable life, in its different stages of growth, maturity, and decomposition, becomes the aliment of other forms; or in other borrowed words, "to eat and be eaten," is a great law of nature.

It would, perhaps, be presumptuous to attempt to assign the motive for the construction of nature on this plan; yet it is impossible to conceive of any other that would give the maximum amount of animal life and enjoyment. But "to eat and be eaten," or to have the same specific vegetable, as has been said of wheat, assigned in its different stages of growth to sixty different animals, must necessarily cause some clashings of interest; some antagonism, strife and war. And the wonder is, not that on such a plan there should be war, but that neither of the combatants, as a species, should be able wholly to subdue and annihilate the other.

But this war is not animated by malice, revenge, or retaliation, but is simply a struggle for existence; and contradictory as the assertion may seem, the harmony, peace, and prosperity of the kingdoms of nature are sustained by strife, war, and devastation. One portion of the animal kingdom is supported by vegetation exclusively; another by animal food ex-

clusively; while the aliment of a third portion is partly animal and partly vegetable. And these several portions embrace all magnitudes from the animalculæ to the larger vertebrates.

The too important and engrossing pursuits of the animal world are the procuring of food, and the providing for a succeeding generation. And it is chiefly in prosecution of these objects, that they make war upon each other and upon the vegetable kingdom.

Many predatory animals, while hunting and watching for prey, are themselves hunted and watched, and are distracted between advancing and attacking on the one hand, and defending themselves, or fleeing, on the other. And the powers and abilities of the preyer and prey are so adjusted and balanced, that the one shall not always succeed in the capturing, nor the other in escaping, lest the first, as a species, should perish with hunger, or the last by slaughter.

And if the price of life and liberty with man is eternal labor and vigilance, so is it with animals. If the stores of man are often plundered and defiled, so are those of animals. If many animals are noxious to man, so is man to many animals; and so are animals to each other. Nevertheless, innumerable species of animals, under all the danger and disadvantages that surround them, continue to live from generation to generation,—and so does man. And when we examine the vegetable world we find that each species is liable to attacks from animals in its infancy, growth, and maturity; at its root, stem, branches, leaves, flowers and fruit; and although it has not locomotion, and cannot avoid its foes by flight, yet it has such means of defence and protection, and such powers of repairing the breaches made by its assailants, and is withal so prolific, that it still lives and flourishes in all its beauty and grandeur.

And now, in answer to the question of the necessity of animals noxious to man, we can say this much, that they are necessary incidents to the plan and structure of nature as we find it.

I propose in the following articles to notice some of the little noxious animals called insects, and their relation to vegetation and to other animals, as illustrations of the general views herein before presented, hoping that if we find it a part of the original plan that we shall not have the ability to exterminate any species, we may discover the means of keeping them in such a *normal condition* as to numbers, that we can patiently, and consistently with our own well being, endure their normal depredations.

For the New England Farmer.

BONE DUST.

As experiments are the chief source of knowledge, I often wonder that those who are willing to make them receive so little encouragement, and so much discouragement and ridicule from their acquaintance; also that they are so reluctant to publish results, especially if they are not successful.

The very few who have lately related their experiments with commercial fertilizers deserve the thanks of the public; while the multitudes who have not, ought to see the printer's devil after them, every time they sleep long enough to dream, till they do it.

The agent of the Boston Milling and Manufacturing Company assumes that I do not question the *value* of *bone* as a *fertilizer!* I do not, but I do question the value of the "bone dust," or "flour of bone," that was tried in this vicinity last year, in the condition, and in the various ways in which it was tried. I may, and I can but *hope* it will do good *hereafter;* but we bought it for a manurial *stimulant,* something that would produce an immediate and perceptible effect; that would operate quicker than unfermented or raw manure, and more powerfully than ordinary animal excrement. We were sadly disappointed. Its operation was so slow that now, after ten months, its effects are not discernable, and as to *power,* future time must disclose.

Like some of your other correspondents, we are all here very much "interested to have it prove very valuable," as most of us have old, worn out pastures that are either stony or too hilly to cultivate, and we are anxiously looking for a portable and efficient fertilizer to apply to them.

I do not question that the Boston Company furnish the pure article, and just as they profess; but it is a query whether the small amount of salt they put in with it for its preservation, is just the thing that ought to be put in. Does it not, to some extent, neutralize or render inoperative, the bone? or "fix" the manurial properties, somewhat as mordants do colors? Or rather, does not the bone need something to be added to *hasten* decomposition, or to so affect it that, as soon as applied to the soil, it will *at once* decompose and become plant food?

With my best wishes for all who are increasing the manure heap, for all who make and *report* experiments, and all who encourage them in so doing, I am, *pro bono publico,*

RUFUS NUTTING.

Randolph, Vt., March 15, 1867.

For the New England Farmer.

CHANGE OF SEED.

The question "What advantage do we derive from change of seed?" does not seem to be very well understood by most cultivators. I believe it is by no means of universal benefit to procure seed from other places, either near or distant.

With plants like the oat, which evidently do better in colder climates, we doubtless gain something by sending to Canada or even to

the northern portion of New England for our seed. With such plants as Indian corn, which require a climate comparatively warm, we sometimes secure the earlier ripening of the crop by going to colder climates for seed; but unless it has been carefully selected and brought to a point as near perfection as the climate will admit, we are very likely to reduce the amount of the crop by such change. With the potato, however, I think the case is somewhat different, from the fact that it is not usually propagated from seed, but from the tubers, corresponding very nearly to roots, and consequently merely increasing the individual plant with the same character and peculiarities as the original.

To my mind the whole advantage of change of seed may be summed up as follows:—1. Seeds of some plants obtained from localities better adapted to their growth, sometimes do better for a few years. 2. Seeds from a colder climate frequently retain their earlier ripening for a few seasons. 3. Seeds obtained from careful cultivators who guard against mixture and save the best seeds for planting are invariably better than those grown by the careless. 4. Most seeds may be placed in the third class.

There is one other point in planting potatoes, which does not appear to be well understood; that is, cutting for seed; which, according to my experience, depends much upon varieties and circumstances. For instance, a variety like the long red, or black Carter, with abundant eyes, will bear cutting much better than one with very few eyes. But here comes in another consideration,—the vigor of growth in the early part of the season. This is, to a great extent, dependent upon the amount of support the sprout can obtain from the tuber, and if the pieces are small the soil must be rich and the growth will be later in the season. But when these conditions are favorable, I have obtained much better crops from cut than from whole potatoes of such varieties.

Wm. F. Bassett.

Hammonton, N. J., March 5, 1867.

For the New England Farmer.

FLOUR OF BONE.

Mr. Editor:—In answer to the inquiry of your correspondent, E. B., Derry, N. H., Jan. 4, 1867, I would say I have used the Flour of Bone made by the Boston Milling and Manufacturing Co., the past season, on my farm at Bedford, Mass. On a field of two acres of corn, I put a half a shovelful of barn yard manure in each hill and a gill of the Flour of Bone with the seed. It came up early, grew rapidly, and ripened early, and the crop was more than a third larger and better than that grown on two fields of the same size nearly adjoining that were manured with a large shovelful of manure in the hill.

On a field of potatoes containing about three acres and a half, I put a large shovelful of barn yard manure in the hill, and on about one-tenth of the field, I used a small quantity of the Flour of Bone with the seed at planting. The part where the bone was used came up earlier, *progressed* more *rapidly*, and was ripe *a fortnight* earlier, with a *much larger yield* than the other part of the field.

John Clifton.

Medford, March 16th, 1867.

The Robin.—In reply to some doubts of the generally supposed utility of the Robin which have been recently expressed by certain learned writers, Mr. E. Chase of Blackstone, Mass., writes as follows to the *Farm and Fireside*:—

"The robins have been, for years, my alarm clock in the morning; and how pleasant it is to hear their matin songs, on the elms beside the house, as I walk with pail in hand to the barn. At this time of day their notes are sweet to me; yes, sweeter than the tones of any musical instrument I ever heard played by human hands. If I had a thousand cherry trees, I should be willing the robins should have half of them, as they are a poor, unhealthy fruit, and fit for nothing but birds to eat? I have often been hoeing in the cornfield, when one or more robins would follow me all day and pick up worms from almost every hill of corn. Who could kill a bird that does this?"

How to Subdue a Vicious Horse.—A correspondent of the N. Y. *Commercial* gives the following account of the method adopted by an officer of the United States service, lately returned from Mexico, to subdue a horse who would not allow his feet to be handled for the purpose of shoeing:—

He took a cord about the size of a common bed cord, put it in the mouth of the horse, like a bit, and tied it tightly on the top of the animal's head, passing his left ear under the string, not painfully tight, but tight enough to keep the ear down, and the cord in its place. This done, he patted the horse gently on the side of the head, and commanded him to follow, and instantly the horse obeyed, perfectly subdued and as gentle as a well-trained dog; suffering his feet to be lifted with entire impunity, and acting in all respects like an old stager. The simple string thus tied made him at once as docile and obedient as any one could desire.

How to Boil Meat.—In *Brewer's Guide to Things Familiar*, we find the following in regard to boiling meat:—

"Why is meat always tough, if it be put in the boiler before the water boils?

"Because the water is not hot enough to co-

agulate the albumen between the muscular fibres of the meat, which therefore runs into the water, and rises to the surface as a scum.

"The best way to boil meat to make it tender is this:—Put your joint in very brisk boiling water; after a few minutes, add a little cold water. The boiling water will fix the albumen, which will prevent the water from soaking into the meat. Keep all the juices in, and prevent all the muscular fibre from contracting. The addition of cold water will secure the cooking of the inside of the joint, as well as of the surface.

"*Why is* MEAT TOUGH *that has been* BOILED *too long?*

"Because the albumen becomes hard, like the white of a hard-boiled egg."

From Chamber's Journal.

OUR LANE.

Where the grass springs and soft winds blow,
And hawthorns wear the only snow;
When lads and lasses stop once more
To play about the school-house door;
And lambs are white upon the leas,
And stars on the horse-chestnut trees,
And birds begin to build again—
'Tis sweet to watch them in Our Lane.

When swallows have their summer made;
And lazy sheep move with the shade;
And the dew loiters on the grass,
Where sweet-breathed cows graze as you pass:
When greedy trout leap by the mill;
And youth goes gaily down the hill—
Who would not be a lad again,
To meet his lassie in Our Lane?

When gossamer floats everywhere;
And golden apples scent the air;
And round about their ancient roots.
Vast pear trees shower their tiny fruits;
And red plums blush 'midst yellow leaves;
And summer friends have left our eaves;
When oaks their leaves no longer hold,
And chestnut trees change green for gold;
And wheat is stacked and sown again—
Then wondrous tints light up Our Lane.

When cheeks look brighter 'gainst the snow;
And crimson holly berries glow,
And ivy reigns, and yew trees sneer
At oak and elm, now sad and drear.
When apples all are pressed or stored;
And ants sit proudly by their hoard;
When pleasant paths look dull and gray,
And old men rest upon their way;
And blackbirds know not where to feast,
And all their pleasant songs have ceased—
Let them be thankful in Our Lane,
If hips and haws may yet remain.

Hearken to what wise black birds say;
"Our spring saw many a merry day;
In summer there were strawberries;
In autumn, we'd the filbert trees;
We tasted all the year could bring,
To mellow autumn from bright spring.
If nuts and cherries all are gone,
There's something to look back upon;
We deem not life unjust because
It comes at last to hips and haws."

—For six years Mr. R. W. Buel, of Franklin, N. Y., was successful in raising onions with no other manure than leached ashes, of which he has applied about a bushel to the square rod. Last year his crop failed, as he was troubled by the maggot.

ON FERMENTING MANURES.

ONE of the important, and yet unsettled questions in farming, is as to the *best condition in which to use manure;* that is, whether in its fresh, crude state; in a state of partial fermentation; or when the process is carried so far as to reduce the manure to a fine and soft mass. This question is sometimes a vexatious one, and is likely to remain so till an extensive series of judicious experiments shall have been made on the subject by competent persons, equally qualified by theoretical and practical knowledge to arrive at precise results, and to be able to communicate them.

Good farmers vary considerably in their practice; some apply manure fresh from the cellar or heaps under the barn windows; some haul it to the field, deposit in large heaps, compost with peat or other crude materials, and allow a slight degree of fermentation to take place before applying it to the soil, while others throw every thing together and let nature take her own course with it,—and nature, in such cases provides a pretty swift process of decay.

We have experimented sufficiently in this matter to bring clear convictions, that the *best mode* is to apply manure to the land in an entirely crude, unfermented condition, *in the autumn*, and plow it under the surface to the depth of three inches. But this course can only be pursued with the summer manure.

If fields intended for hoed crops are plowed in the fall, they may receive green manure in the spring, just as soon as the soil is sufficiently pliable to fall to pieces when stirred, and then if the manure is immediately plowed under, decomposition will take place sufficiently fast to furnish the growing crop with the aliment it needs.

In this way there is no loss of manure. Not only are all its valuable qualities saved, but they are fed out, as it were, at such times and in such quantities as best suit the plants that require them—much as we feed our domestic animals at such times and with such portions as are best suited for them.

But there is still another and very valuable operation going on in the soil through the agency of unfermented manure. As it heats, it expands; gases, rich in nutriment, fly off from it in every direction. These permeate the soil in all its minutest recesses, warming and separating its particles, and filling them with nutritious food, which the roots of plants are incessantly in search of. And these roots *exercise a choice!* They will make a short turn from a course which they had been pursuing to get at a spots enriched by decomposing manures, and their warm and fertilizing gases! Wonderful instinct! What else can we call it?

Roots only take their food in a soluble form, and if we apply manure in a green state to the soil all the operations necessary to reduce them to a soluble form take place beneath the surface of the ground, and in the very home of the roots themselves. These substances that would become offensive if left upon the surface, are soon converted into forms of beauty and usefulness.

In one of his lectures upon the chemistry of agriculture, Sir Humphrey Davy says: "If the pure dung of cattle is to be used as manure, there seems to be no reason why it should be made to ferment *except in the soil;* or if suffered to ferment, it should be only in a very slight degree. The excess of fermentation tends to the destruction and dissipation of the most useful part of the manure."

A distinguished farmer in England states that he has entirely given up the system formerly adopted on his farm of applying fermented dung; and states that his crops have been as good as they ever were, and that *his manure goes nearly twice as far!*

We call attention to this matter now, as the season is near when the preparation of manure for spring planting and sowing, will be taken in hand.

FARMERS' GARDENS---No. II.

Location.

Every man should do his best to own a home. The first money he can spare ought to be invested in a dwelling, where his family can live permanently. There is something agreeable to our better nature in having a home that we call our own. It is a form of property that is more than property. The associations that spring up around it, as the birth-place of children, tend to improve the moral sensibilities. Our happiness of to-day is increased by a view of the place where we were happy yesterday. The scenes and circumstances by which we are surrounded have much to do, not only with our character, but with our happiness.

On this account, we should do all in our power to make our homes attractive. It costs little to surround our dwellings with these simple beauties which delight the eye far more than expensive objects.

Perhaps there are few things that mark the progress of civilization and the arts more than correct taste in architecture and gardening. So long as men are indifferent to the appearance of the house they live in, and the grounds that surround it, they will rarely exhibit a true taste in anything else.

We are happy in the belief that our farmers are gradually improving in this respect. As intelligence and wealth increase, so do refinement and good taste. In a ramble which we recently took in the western part of Massachusetts, we found much to strengthen this belief, —houses of a better class, well finished and painted,—better fences, smooth and velvety lawns instead of door yards filled with rubbish, —shade trees around the houses and along the highways, and a piece of land set apart for garden purposes, into which a few hardy shrubs are introduced, with small fruits, asparagus, and other esculents, and a variety of apples coming into use from July to July. The garden on the farm is one of the happy changes that has taken place, and was observable all along the route.

The cheerful influences of better buildings and productive gardens have developed a taste for the cultivation of flowers,

> "Whose voiceless lips are living preachers,
> Each cup a pulpit, and each leaf a book."

The garden should conform in its style and character to those of the homestead and its surroundings. It should be in the immediate vicinity of the house, so that it may be readily accessible and under the constant supervision of the household—and if a portion of it is devoted to the culture of flowers, it should be so located that the passing neighbor and stranger may enjoy its beauty and fragrance, if possible.

A good garden needs a variety of soil, and

if it can be so arranged that it will embrace a high and dry soil, and that which is lower and more moist, it will be an advantage. Early vegetables, as lettuce, peas, beans, and early potatoes, need a warm, dry location. Those which come later in the season, strawberries, pears and some other plants, thrive better in a more moist soil. A situation on a southerly slope—if the slope is very slight—near the foot of a knoll or moderate elevation, is desirable. Such a location affords a shelter which most garden vegetables require in their early and tender stage. When situated in the immediate vicinity of the house, it will be more frequently visited by the children and females of the family, and they will become more interested in its products and cultivation.

There should always be a dry and well kept walk from the house to the garden—and if practicable, this walk should be bordered by shrubs or flowers, so as to tempt the feet of visitors as well as the inmates of the house.

As farm buildings are usually erected without reference to a garden, it cannot always be located in the most desirable situation. It is not uncommon, even now, to find the garden ten, fifteen, and sometimes twenty-five rods from the house! This is done to get it out of the reach of the hens. But think of the inconvenience, and amount of travel through a lifetime, with such an arrangement. In the first place, no garden will be well tended in such a location,—and in the second, it is much more expensive than it would be to *prepare* a good soil near the house and enclose it with neat palings or a tight fence that will keep the fowls out. Being near, even a few leisure moments may be spent in weeding, hoeing, or something else, and the table will be often supplied with delicious vegetables, which would not be there, if the women were obliged to go some distance for them.

WORCESTER, MASS.—Officers for the year have been elected as follows by the Worcester West Agricultural Society:—

President—Edward Denny of Barre.
Vice Presidents—George W. Buttrick of Barre, and Hon. Charles Adams, Jr., of North Brookfield.
Treasurer—David Cummings of Barre.
Secretary—Charles Brimblecom of Barre.

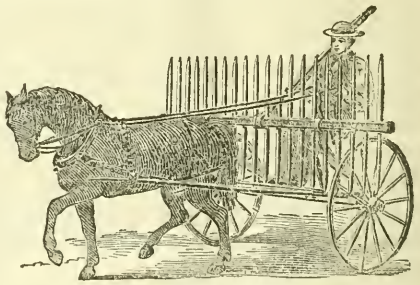
It was also voted, "That we appropriate the sum of $50 annually for a scholarship in the Massachusetts Agricultural College, the person to receive the benefit thereof to be determined by the officers and trustees of the society."

WARNER'S SULKY REVOLVING RAKE.

Other things being equal, almost every body prefers riding to going afoot. Hence the chief objection to the revolving horse rake has been the necessity of walking while using it. This the proprietors of the *Sulky Revolving Rake* believe they have successfully obviated, and at the same time preserved its simplicity of construction, and its ease of operation. The proprietors, H. J. Fay & Co., furnish the following description:—

Working Position.

This rake is substantially the common revolving rake attached to a sulky and operated by one single lever, attached at the center of the rake-head, provided with spring, stops and catches for the perfect controlling of the rake. To revolve the rake the operator, with the thumb, springs the latch, and depresses the end of the lever a little, suddenly, which throws the points of the front teeth to the ground, causing the rake to revolve. The rake is elevated to pass over stones or any obstacle that may be in the way of elevating the lever, which raises the front teeth high enough to pass over obstacles twelve to fifteen inches high.



Transporting Position.

This second cut represents the position of the rake when folded for transportation, which is a convenience of no small importance. It is so arranged at the joints connecting the rake with the sulky that the rake is readily detached from the sulky, leaving the sulky free to be used for other purposes, if desired, which often proves a convenience, as it is furnished with an easy spring seat, making it a convenient sulky. After thoroughly testing the merits of this rake during the last three haying seasons,

the proprietors have no hesitation in offering it to the farming public as the best rake in the market for all reasonably smooth meadows, or for meadows suitable to be mown with a machine, and hold themselves ready to test its merits in the field with any other horse rake, at any suitable time and place. Further particulars will be found in an advertisement in another column.

For the New England Farmer.

PROFITABLE FARMING IN MASSACHUSETTS.

Illustrated by a sketch of the success of Mr. PETER DAVIS, of Framingham, Middlesex County, from his first engagement at seven dollars per month, and a six years' tenancy, to the ownership of one of the best farms in the State.

During the last twenty-five years nearly all the increase in the population of New England has been in its cities and villages. In many of the older portions of the farming districts there has been a positive and an alarming decline. The young men and young women appear to think that comfort, respectability and wealth are to be sought in any or every pursuit except that of farming. It would almost seem that the instinct for city life in the boys and girls of our rural districts was as strong as is the instinct for water in the brood of the mother hen that unfortunately incubates a nest of duck's eggs. The effect of this rush of population from the country to the city, from the farm to the factory, the shop and the store, has long been a subject of regret to the thoughtful among our agricultural writers and thinkers. But all considerations and arguments against this current of the times is met by the ever-present objection of the unprofitableness of practical farming.

For the benefit of young men who are balancing the question of leaving or abiding upon the farm, I have obtained a few facts which show what has been done, and what may yet be done, on the soil of old Massachusetts. It was with considerable reluctance,—a reluctance that was overcome only by the consideration that his success might encourage other young men to imitate his example,—that the gentleman of whom I am about to speak consented to the use of his name.

In the town of Framingham, Mass., twenty-three miles from Boston, on the Worcester railroad, there is a well cultivated farm of 150 acres of land, with about one thousand bearing fruit trees, a fine residence, a barn 100 feet in length, with a nice cellar under the whole, and other buildings to correspond, and every thing about them in fine order. The owner pays the highest income tax of any farmer in the town, which, by the way, is in one of the best agricultural districts in the State. He is fifty-three years old, active and vigorous, with an interesting family growing up and around him, and is withal highly respected by his fellow townsmen. This estate was not inherited; it was not acquired by speculation; it was not paid for from the profits of commerce, high salaries, or any lucky turn of the wheel of fortune. How, then, was it obtained?

Engages by the Month.

The owner, Mr. PETER DAVIS, began life without capital, and has never engaged in any other business than farming. At the age of sixteen he commenced for himself by an engagement for eight months, at seven dollars per month, and continued his work at various wages—but never exceeding ten dollars per month—till twenty years of age.

Leases a Farm.

At twenty years of age he leased 125 acres of his present homestead for the term of six years. Previous to his occupancy, the farm had been leased for twenty years, and had suffered the skinning process to which leased land in New England is almost invariably subjected. Some portions of it were badly "run out," others badly "run up" to bushes and other foul growth. Although he managed somewhat after the manner of leased farming, he believes it was in better condition at the end of the six years than at the beginning of the term.

Original Purchase.

At the expiration of this lease he bargained for the farm, and has now owned it twenty-seven years. The conditions of the purchase were $5000; one thousand paid down, and the balance in eight annual instalments of $500 each, with interest. In making this purchase he acted against the advice of several of his neighbors, who predicted that he would be unable to meet his payments with accruing interest money, and thus lose his entire investment. He believed, however, that, with health, he could pay for it, and the result has justified his faith in the profit of farming, even in New England. For some years he was obliged to borrow some money to meet his payments, but his industry and perseverance gave him a credit by which he was enabled to raise the necessary amount without trouble.

Amount of Hay raised, and Stock kept.

During the first year of his ownership, the production of the farm was so small, that in order to keep his stock of eight cows, two yoke of oxen and a horse, he was obliged to buy one hundred dollars worth of hay. The next year he bought ninety dollars worth. The third year he turned the tables, and sold hay to the amount of two hundred dollars, and has sold some every year since, although his stock has gradually increased from year to year, until he now keeps about twenty head of cattle, two horses, and ten hogs.

Mr. Davis now mows about forty acres, and harvests from sixty to seventy-five tons of hay, some ten of which are "meadow." He gener-

ally sells about twenty tons of good English hay;—last year at $1.85 per 100 lbs., when the sales amounted to over $800; and three years ago to $1050.

At the time I visited this farm, last fall, the large barn was well filled, and his stock all looked remarkably well. His cows were mostly Jersey and Ayrshire grades, with our native stock.

Improving a Meadow.

The reclamation of a meadow of some eight acres, was one of the first improvements which Mr. Davis attempted after making his purchase. At that time it produced about five loads, of some twelve hundred pounds each of hay per year. Being short of manure, he drained and plowed only two acres the first season. Eventually the whole was treated in the same manner. From an acre of this meadow, to which twenty ox-cart loads of compost had been applied the fall previous, 4400 lbs. of hay was harvested.

Composting Manure.

With Mr. Davis the shovel is an important farming tool, and he uses it a good deal. Every fall he covers his yards deeply with yellow loam or muck. This is plowed in August, and again in October, and carted out and spread. He intends to average twenty ox-cart loads for each cow or hog for top-dressing, and believes it pays. His materials are so situated that a good workman will put in about twenty loads per day, and get out about fifteen and spread it. Last year he carted two hundred loads of loam into his cow yard. On his land, most of which is of a clayey soil, loam, of itself, as a top-dressing, increases the growth of grass, but he believes that the increased value from composting pays for the extra labor.

Fattening Pork.

A part of the ample cellar under the barn is occupied by swine. Last year he fattened eleven hogs. Eight of these when dressed in the fall, weighed 2960 lbs., and were sold at 14½ cts. per lb., amounting to $429.20. They were but a little more than a year old. For the two previous years, he sold his pork at 20 cts. per lb. He fats and kills early in the fall. He does not prefer the largest breed of hogs, but thinks he gets more pounds of pork for the same food, and a better price for those of medium size, well fattened and sent to market early. He has found the raising of pork very profitable, besides affording a large amount of dressing for the farm. He thinks that at present prices of grain, it would pay to raise pork at ten cents.

Indian Corn.

Large fields of corn are also raised upon this farm. Last year there were ten acres planted, which yielded nine hundred bushels, or an average of fifty bushels of shelled corn per acre, besides quite a number of bushels of potatoes, which grew upon the same land. The stover from this corn Mr. Davis estimates will save one ton of hay per acre, or ten tons in all. The corn is all spent upon the farm.

Peach and Apple Orchards.

In place of the noble orchard of about one thousand fruit trees which now occupies a portion of the farm, there were a few "seedlings" and one grafted tree, at the date of his purchase. For several years a peach orchard which he planted yielded from three to four hundred bushels per year of this luscious fruit. In common with other peach orchards in this part of the country, this failed after bearing well for about five years.

Addition to the Farm.

About eight years ago he made an addition of twenty-five acres to his homestead, at a cost of $1300. Ten acres of this was mowing land and the remainder a bush hill, which he has converted into a good pasture. When Mr. Davis bought this farm, the buildings were worth but little. But as already intimated, he has rebuilt, and they are now quite valuable and very convenient.

The Secret of Success.

In answer to a question as to the secret of his success, Mr. Davis said that he did not know as he had any secret, unless it was the lesson which he learned soon after commencing business for himself, from the loss of a valuable cow by neglect to fill up a hole left on his premises. This impressed him with the importance of finishing at once every job that is undertaken, and of careful attention to every part of the work or business on hand.

I have no hesitation in saying that there are thousands of farms in New England which offer inducements and opportunities equal or superior to those which induced Mr. Davis to settle upon this place which he has so greatly improved and beautified. Manufacturing and trade, as they absorb capital and employ labor, furnish a ready market for the productions of our New England farms. And when the disastrous fluctuations which render trade and manufacturing so unreliable, are duly considered and better understood, it is to be hoped that the many examples of successful farming which are witnessed in New England will finally settle the question of the profitableness of farming in the affirmative, and that many young men will be led to imitate the example of Mr. Davis, which I have thus imperfectly sketched. W.

January, 1867.

—The Trustees of the Pennsylvania Agricultural College, have decided on the establishment of two experimental and model farms, of 100 acres each, one in the Eastern and one in the Western part of the State.

For the New England Farmer.

DESTRUCTION OF TREES AND SHRUBS.

Many years ago, at a time when I was confined, through the best part of every year, to an absorbing and laborious employment in the city, I, one day, weary of brick walls and flinty pavements, escaped from town, and, hastening to enjoy the wildness and beauty of the woods and fields, rode towards a lane, the very thought of which had always been refreshing to me. There I expected to be at once surrounded by the trees and shrubs which belonged there, such as gradually border a road in the country, when left to itself. What was my disappointment to find them all gone, and my delicious green lane reduced to a bare, vulgar, dusty, country road. The owner of the land on the two sides had been seized with a disease to which men of little taste are liable, the *mania for improvement*, and in a paroxysm of the malady, had ordered all the beautiful shrubbery and thriving young trees to be cut down, and the land between the road and the walls to be burnt over. Never, by a single operation, was so much beauty destroyed and so much ugliness and deformity left to take its place.

The pretty winding lane had been shaded from the sun in summer and sheltered from the cold winds at all seasons, and its thickets had thus become a resort of the birds, whose earliest notes might be heard there in the end of winter, and whose evening songs were sure to greet me there in the summer evening twilight. As I passed along that road, I loved to let my horse walk while I dwelt upon the thought, what a charming residence for summer, or for the whole year might be, perhaps may be, built on that lane. Since its desecration, I have never for a moment had a feeling which would suggest such a thought; I have avoided with a shudder what had long been a favorite path.

A very few years ago, a similar violation of the principles of good taste was committed, I hope thoughtlessly, on a road which was formerly the Boston and Worcester turnpike, in that portion of it which is in Brookline, nearest the edge of Newton. The natural, beautiful growth on both sides of the road has been destroyed, and a row of unprotected trees substituted. The trees are not bad in themselves, but how far less beautiful than the original denizens of the forest with their natural grace, whose place they have taken. No attempt has been made to supply the loss of the exquisite shrubbery. The person who suffered this outrage to be perpetrated was evidently one who ought to have known better. He has built a noble wall and planted these few trees between it and the road. He probably gave only general directions, and entrusted the execution of his *improvement* to some stupid barbarian, and he may be, at this moment, suffering as much as I suffer whenever I pass that way, from the loss and ruin he has occasioned.

A young friend of delicate taste and refined perception of natural beauty, tells me that such things are even now done, not many miles from Boston; and she gives me a case where the offender was,—not an individual misled by a false theory of improvement of his own property, but —a town officer, who ought to have been not the violator, but the guardian of public and of private rights, and one on whom an aggrieved lady might confidently rely for protection.

Outside my friend's fields, and between her fence and the public highway which ran along one side of her farm, was a space of one or two rods, planted by the hand of nature, with the usual shrubs and trees which grow wild in Middlesex. She valued this border as at once a screen from passers on the road, a protection from wind and sun, in her own walks and drives, and a graceful border to her land, a delicate fringe, of varying colors, to the homely green and browns of her meadows and cultivated lands. During a temporary absence, a surveyor of roads suffered, perhaps ordered, this precious hem to be torn and ripped away. The trees were cut down and the bushes grubbed up.

She knows not, and I know not, whether she has or has not a remedy by law for the injury she has suffered. In the nature of things, there is no remedy. Her beautiful border is gone; and it would take thirty years, with the best intentions and the most skilful management, to bring it back and make it what it was; and, in that time, youth and much of womanhood will have past, and the enjoyment she would have had from it, for all these years, will be absolutely lost.

A sense of my own loss from the vandalism I have described, my sympathy with a dear friend in what she has suffered, and my fear that others may be suffering or likely to suffer, in the same way, who have none to speak for them, have led me to trouble you, Messrs. Editors, with this communication. If you agree with me so far as to allow it to be published, I shall ask to be permitted to give some reasons, in a future paper, why the evils of which I have spoken should henceforth be guarded against.

G. B. E.

Boston, March. 1867.

For the New England Farmer.

BEST TIME TO APPLY MANURES.

The Secretary of the Irasburg, Vt., Farmers' Club, furnishes the following sketch of the discussion of this important subject at a late meeting of the Club.

Z. E. Jameson thought that the plan of applying manure as soon as convenient after it is made, was growing in favor with farmers, and that manure heaps are not desirable or profitable about the barns. Those who are partial to old manure will then have it, of all ages, in the soil. No great loss will be sus-

tained if manure is drawn out upon frozen ground, as we see some doing, or spread upon a thin body of snow, if the ground is level enough to prevent the dissolved juices from running away when the snow thaws. Water is very necessary to prepare manure for plant food, and when frost is coming out, the ground will absorb the dissolved manure very readily.

W. L. Jameson said, that what sounded well in theory, would not always prove best in practice. His farm, though quite level, was not level enough to prevent the juices of manure from running away with the melting snow while the ground is frozen. He had found that immediately after haying, is the best time to apply manure to grass ground as top dressing. He had practiced it several years. When he bought his farm it was bearing a fine wild grass of inferior quality; but scarcely enough coarse grass to winter one horse. Now all his upland produces good coarse hay, some of it growing nearly as high as his shoulders. He had never bought much manure, as he had plenty of muck, which composted in various ways proved to be of great benefit. One year he bought a barrel of lime, slacked it with salt water and mixed it with muck. This spread upon the grass increased it three fold, and its beneficial effects were obvious for six years. His soil is somewhat clayey and bakes quite hard in summer, but where the top dressing was applied it did not become so hard. Manure applied immediately after haying produced a much better result than that applied later in the season. It seemed to protect the grass roots from the scorching heat of the sun. He had tried top dressing on sandy soil with good results.

Mr. Colton had top dressed new land among the stumps, and believes it better to keep up grass ground in that way, as it is somewhat costly to plow and re-seed, as he sows four pounds clover and from eight to twelve quarts of timothy per acre. In applying manure to cultivated ground, would harrow or plow it in shallow. He does not favor very deep plowing, and does not believe manure is lost by leaching. Had often noticed the increase of grass on Mr. Jameson's farm where it was top dressed.

Mr. Church had experience with dry and sandy soil, and found it best to plow in manure. It lasted longer, and the neighbors remarked the improvement. If he was intending to top dress he would spread the manure about the time of the fall rains, and not in the dryest and hottest, nor in the winter season.

W. L. Locke, Jr., had plowed in manure on sod ground for corn, and at the next plowing he went about three inches deeper, thus bringing the manure again near the surface and making a rich seed bed upon which to sow grass seed and grain. He had top dressed when seeding to grass with good result.

Mr. Brewster would not spread manure in winter, but would draw it at that season, if more convenient, leaving a load in a place, but on no account should the manure lay in the yard through the summer. Upon plowed ground, that he intended to sow to grain and grass, he would spread the manure as soon as the frost was out so it would harrow well, as early sowing caused a better "catch" and growth; but for hoed crops would plow in a large quantity of green, coarse manure.

The Club voted to endorse the method of W. L. Jameson for keeping up the fertility of fields in grass; and Mr. Brewster's plan with grain and hoed crops.

DISOWNING LAMBS.

Dr. Randall, of the *Rural New Yorker*, gives the following summary of the means which are adopted by the leading sheep-breeders of New York and Vermont to make the ewe own her lamb:—

When a ewe disowns her lamb, Mr. Baker places them in a pen, two and a half feet by three; or if the ewe is very refractory, fastens her by a ring and staple to an upright stake—the strap being so short that she cannot turn round to butt her lamb. She is held for it to suck frequently, and if she continues refractory after it is able and tries to help itself, she is switched over the face and ears till she submits. Brown, Elithorp, Pitts and Sanford use the pen, and the switch "persuasive" if necessary,—Elithorp turning the ewe's head so she can see the lamb as it sucks. E. O. Clapp uses the pen, the stanchions, the switch, and sometimes frightens her by tying a dog in her sight, to arouse her maternal instincts. A. H. Clapp confines her head in stanchions, and prevents her stepping about with her hind feet, to get away from the lamb, by narrow bars—placed close on each side—but releases her and puts her alone with her lamb a short time each day; and he sometimes frightens her with a dog or some unusual object. Gregory uses a pen so narrow that the ewe cannot turn round, and places the lamb under her. Hammond uses a pen, separating the lamb from the ewe about half the time, and placing it where she can hear it bleat; Heyne, a pen about five feet square; Pottle, a small box or pen, preferring a dark one; Rich, Saxton and Wilcox, a small pen; Wright, a small box-stall, tying the ewe so she cannot turn round. It will be understood, of course, that *all* assist the lamb to suck *frequently*. Pitts thinks that early success depends upon this frequency.

We do not remember ever to have found the *switch* necessary; and not being very strong advocates of "corporal punishment" have never recommended its application to the recusant dam; but the above testimony in its favor is certainly very strong. The small pen, made dark if it can conveniently be done, and placed out of hearing of the flock, with *kind* treatment, has always sufficed in our experi-

ence. The sheep must be well fed to prevent a drying up of the milk—her uneasiness, &c., producing a strong tendency in that direction.

CONSOLATION FROM SCIENCE.

Who that has battled with the weeds of his cultivated fields, or seen his choicest grasses giving place to the Canada thistle, ox-eye daisy, &c., or reflected upon the probable annual cost of weeds to the farmers of the whole country, has not sometimes indulged in hard thoughts, if not in hard words, as he has seen how defiantly they withstand all his efforts for their extermination? By all such the following extract from an article in the *Country Gentleman*, on "Weeds," may be read with profit.

To have a correct view of the economy of weeds it is necessary to look back a little into the past. It is the commonly received opinion of the learned that all our soils have been formed by the continuous growth and decomposition of vegetable substances. These, in their countless variety, have been adapted to all situations, where their growth can be maintained. The rugged mountain, the oozy marsh, the barren road bank, and fertile plain, have each a vegetation adapted to clothe them with verdure, and prepare them for the sustenance of man. The fattening grasses that now clothe our unbroken prairies, were preceded by rank weeds.

Should any of our now fertile fields be left to the hand of nature, it might first produce daisies, rag weeds, or whatever the soil or neighborhood afforded. The growth of these would be a *shelter* for the seedling grasses, which, eventually becoming strong, would choke out the friends of their infancy and assume *complete* possession. The very cleanest fields of Maryland are those which have been for half a century abandoned from the plow. No doubt, after their last crop of corn or tobacco, they made a formidable display of weeds; but we find them covered with the prevailing "sedge grass," interspersed with Naphthalium, and here and there on the richest spots a feeble growth of "green grass."

Thus, when we consider the great mass of plants known as weeds, chiefly annuals or biennials, in their true character, instead of charging them with an annual *cost* of millions to the farmer, we shall find them to have been the humble agents in adding fertility to our soil—perhaps in making it all that it is.

—Dr. Randall advises against breeding from a black ewe, for the reason that though she might never have a black lamb, the color would be more likely to crop out in some of her descendants, than in those of a white ewe.

EXTRACTS AND REPLIES.

HUNGARIAN GRASS—CULTURE OF POTATOES.

A subscriber desires your opinion on the merits of Hungarian grass for soiling purposes. If favorable, please state in what soil it thrives best, how the ground should be prepared, when sown, &c.

Please also give in the FARMER what, in your view, is, on the whole, the best method of preparing the seed and planting potatoes, i. e. what size, large or small, or medium, cut or uncut; if cut, how many eyes to a piece, and how many pieces or whole potatoes in a hill? If planted in hills, how far apart? &c., &c.

I wish the readers also would give their experience. G. B.

Essex, Vt., March 9, 1867.

REMARKS.—Hungarian grass, when not grown too rank, makes an excellent fodder. Any corn land that will produce 45 or more bushels of corn per acre, will bring a good crop of Hungarian grass. Prepare it as land is usually prepared for barley or oats. The soil should be fine. Sow from the 25th of May to the 10th of June, about 12 to 13 quarts of seed per acre. We have no doubt but it is a very profitable crop. It is an "annual," however, and must be sowed every year.

Our practice in raising potatoes is to put them on new land if we can. Plow deep, ten or twelve inches, if the ground will permit; put the rows 3½ feet apart, and in squares, so as to cultivate both ways; manure in the hill, with the coarsest manure, on moist lands, and finer manure, on high and dry lands. If a portion of fine manure is spread and worked under before the furrows are marked out, so much the better. On the manure in the hill, throw a small handful of plaster of Paris.

Our seed potatoes are selected in the fall, when the crop is harvested, and are those which are considered too small for the table. Two of these are put in the hill, and if approaching the size of a hen's egg, it is cut and the two pieces used. We have planted the same variety, namely, the Riley, Dover, or "*Irish Cup*," which latter is its true name, and from the same sized seed, for seventeen years in succession, and cannot discover any diminution in size or flavor yet.

SCRATCHES ON HORSES.

A few weeks since we replied at some length to the inquiry of "R. P. T.," of Pittsburg, N. H., for a cure of this disease. Since then we have received communications from five gentlemen upon the subject, to each of whom we tender our thanks for their attention.

Mr. Hiram French, of Eaton, C. E., writes that after having tried our prescription without effecting a cure, he obtained from an experienced dealer in horses the following remedy: A decoction of tamarack bark is made by boiling a bushel of the bark in a kettle of water thoroughly—strain off the liquid—add more water—boil again—then strain as before—remove the bark, and boil the whole down to one pailful. Give the horse one pint of this twice a day by soaking his oats in it.

This purifies the blood and creates an appetite. After thoroughly washing with strong soap suds, and rubbing dry, apply, night and morning, an ointment composed of half a pint of linseed oil, two table spoonfuls of fine salt, same of sulphur, same of saltpetre, and one ounce of turpentine, well mixed. Having cured a valuable horse of his own, in this way, he confidently recommends it to others.

"W. H. J.," of Winchester, N. H., suggests, as the disease is caused by impurity of blood, that, in addition to good feed and careful usage, a spoonful of sulphur should be administered once a week, and then if, on trial, our remedy does not cure, apply every morning, after washing clean, an ointment composed of a tea-cupful of lard, with as much camphor gum as can be dissolved therein, simmered together with a little rosin.

"J. C. M.," of Lancaster, N. H., is now using a good horse, that some six years ago had the scratches badly, which he cured by giving him sulphur, cleaning the issues on his legs, and roweling in a bit of onion. On his recommendation others have effected cures by the same means.

"B. F. B.," of Fletcher, Vt., gives the following, which he knows to be a sure cure: Wash perfectly clean with castile soap and warm water, then apply, while warm, an ointment of gunpowder mixed with sweet cream or fresh butter, to the consistency of thin paste.

"C.," of Groton, N. H., also recommends the gunpowder, ground fine, and mixed with lard. Rub thoroughly into the cracks.

IS IT ADVISABLE FOR A YOUNG FARMER TO SEEK FORTUNE AT THE MINES?

When a boy I thought that an Editor knew everything, and I still think that they are better qualified to answer questions than most people, so I venture to ask the following: Do you think it advisable for a young man to seek his fortune at the mines, and is there any prospect of success? If so, would you advise one to try his fortune in California, Colorado or Georgia? I am a young farmer, and do not like farming unless I can possess one of my own, and there is no prospect of that very soon if I stay at home. If you think it advisable to try my luck in any of the abovenamed places, please state what it would cost to go there, and oblige a reader of the FARMER. ALBERT.

REMARKS.—Stick to the farm. Read the letter dated at Georgetown, Va., and also the statements of a correspondent, which shows how one poor boy in Massachusetts obtained a good farm.

Why not work on a farm for wages several years, learning all the time how to manage one, while your money is accumulating to purchase with? This is better than young men do in stores where they frequently get no wages, and are obliged to pay their board! A relative of ours laid up $3000 from wages as a journeyman farmer, before he purchased the Connecticut River farm on which he now lives.

There is not one chance in one hundred that you will succeed if you go to mining; and if you should, you would probably ruin your health in the effort. The employment, as it is generally conducted, is debasing to both body and soul. Do not make haste to be rich. Stick to the farm, and health and honors will stick by you.

"A POOR MAN, ON A POOR FARM."

What kind of farming will profitably succeed on a pine plain farm, in western Massachusetts, where the soil is sandy, and don't yield a good crop? Can any one advise a poor man, on a poor farm, what to do? W. C. B.

REMARKS.—This is just what we all wish to know. Who will tell us how to get good crops from sandy lands without the aid of much capital? If some one could find out this secret, and get a patent for it, wouldn't he make a pile. Plenty of our correspondents have been through the process and know how to handle the pen as well as the plow; we hope they will inform their brother, "W. C. B.," how they did it. We should not be surprised if "W. C. B." could give us some valuable hints on the subject, himself. It is just the question that a thousand New England farmers want answered.

HENS EATING THEIR EGGS.

My hens have got in the habit of eating their eggs as fast as they lay them. Will you or some of your correspondents inform me through the columns of the FARMER, of a remedy and speedy cure? A SUBSCRIBER.

Hadley, Mass., March, 1867.

REMARKS.—Give the hens two or three kinds of grain during the week, and a dish of warm mashed potates and cob-meal, each day, and mix this with some fatty substances, such as scraps, or grease from the kitchen. Furnish them a place where they can be in the sun when it shines, and where they can come to the ground and get plenty of dry ashes to wallow in. Let them run at large a portion of the day, and when shut up have scrupulously clean quarters. They ought to have a little fresh meat or fish occasionally, and always gravel, oyster and clam shells, pounded, where they can be obtained readily. Dry bones in the stove oven and break them into small pieces for them. They will act as though they were hungry when you put them before them.

LETTER FROM VIRGINIA.

MR. EDITOR:—It seems strange to me that Northern people do not turn their attention more this way. There is much land in Gloucester and Matthews County, probably as good as the Connecticut River bottoms, and as healthy. The lands are low, but not sufficient to overflow. Oysters, fish, crabs, &c., are plenty in season. This land is excellent for apples, pears, peaches, figs, &c., with navigation to the door.

I would be glad to join an association of farmers and mechanics to form a settlement for a town or fruit farms, at an excellent location, high and dry, where a ship of the line could anchor within a few yards of the shore, in a good harbor. Facilities for taking fruit or produce to market are unsurpassed, as steamers run daily to Baltimore, Philadelphia, New York or Boston. The asking price,

say for six or eight hundred acres, is $30 per acre, and this is in the heart of the oyster region, where $300,000 is expended annually, I judge, in that business alone.

I was in North Carolina, a few days since, in Carrituck County, and saw very large vines of the Scuppernong grape, which were said to produce 30 bushels to a vine, some even more. That variety of grape would undoubtedly flourish splendidly on this land. I drank wine (white,) made from this grape, which would be hard to beat. It was very delicious, although new. I shall be in Charlestown, Jefferson Co., West Virginia, in a few days. If any wish to communicate with me on the matter above mentioned, I shall be glad to hear from them. SAMUEL CLARKE.

Yorktown, Va., March, 1867.

REMARKS.—The existence of slavery has undoubtedly kept Northern people from examining and settling upon the land of which our correspondent speaks. Having visited the localities which he describes, several times, we came to the conclusion that there are few if any places which offer so many advantages to young and enterprising farmers, as in the region of Yorktown. The climate is healthful, the land excellent, and the whole world is open for a market. It is near the mouth of two splendid rivers, the Potomac and James, both pouring their vast volume of water into the magnificent Chesapeake Bay. It is little more than 24 hours' distance from New York and Boston, and on the very threshold of the Atlantic Ocean. Go and see it, young men, before starting for the mines of Idaho or any other place.

RAISING PLANTS IN PASTEBOARD BOXES—FERTILIZER FOR TOP-DRESSING—STANCHIONS.

I think of having a few early vines this spring. My plan is to plant my seeds in pasteboard boxes large enough to contain one hill each. When the ground is warm enough, I shall set these boxes in the ground, and I think they will decompose and offer little or no resistance to the roots. I have tried to transplant vines, but with no success. Do you think I shall have good success with the pasteboard boxes? What is the best kind of fertilizer to spread broadcast upon grass land, excepting stable manure?

I saw, a short time since, in your paper, a plan for cattle stanchions. Who can be so barbarous as to oblige a cow to lie with her head in the manger, when she would, if left to do as she chose, lie down with her head against her side? I have seen a good many plans for securing cattle, but for their comfort I prefer the chain, well known as the "cow-tie." C. H. W.

Wiscasset, March 11, 1867.

REMARKS.—You will probably succeed well with the boxes. To make plants grow well, and get them early and strong, a little *bottom* heat is necessary. This may be supplied by a good bed of coarse horse manure under them.

Superphosphate of lime has done admirably as a top-dressing on grass lands.

SIXTEEN CROPS OF WHEAT WITHOUT A FAILURE.

The high price of flour will induce many farmers to sow wheat this spring. Having cultivated this crop for the last 16 years, I may be in possession of some information in relation to growing wheat, that may be of some use to farmers at large.

Much depends on the right soil, and much on the manner of cultivation. I would not, therefore, advise an indiscriminate sowing; for if that is done there will be a good many failures. With me, the best soil for wheat is a loamy ridge, where there is a free current of air, or even where the winds have full play. The land should be in good condition, but not from fresh manure; if any is used it should be well rotted, old manure, as new will induce a large growth of straw at the expense of the berry, and probably result in mildew.

I prepare my wheat lands mostly in the fall by plowing once after corn or potatoes. Wheat does best where the surface, for two or three inches deep, is made fine and loose with the harrow. As early in the spring as the land is dry enough, I plow well and sow the grain, harrow, and smooth off with a brush. The seed should be well washed and soaked in brine for two hours, then drained off and dried with lime to destroy the smut. About one and a half bushels should be sowed to the acre. As soon as it comes up, sow one bushel of plaster to the acre. The essentials of success in raising wheat are, the proper preparation of the ground in the fall; early sowing; an early variety, if possible; soil rich, but not with new and unfermented manure, so that the crop may be hastened to maturity, and avoid all the hot weather possible. I have made sixteen crops of wheat on the farm on which I now live, without a failure, though at some times it has been better than others. H.

Epping, N. H, March, 1867.

REMARKS.—Such valuable communications as the above we dislike to print with a mere initial. The writer of an article which informs us how sixteen successive crops of wheat have been raised in one of the older States of New England, may shield himself from the respect and gratitude of the public, but has he a right to withhold from his wife and children the honor of his good name? In making this remark we have in mind the fact that other wheat growers who have responded to Mr. Parmenter, have regarded his request to do so with their full names, and residences.

APPLE TREES ON THE ROADSIDE.

Last fall I prepared my ground for planting some apple trees this spring; the lot is bounded on one side by the highway, and one of the rows runs parallel with it.

Now, up here in New Hampshire, the consumer appears to have an idea that the producer has few rights which he is bound to respect, and so it follows that those trees which are situated within cosy clubbing distance of the road are of the least profit to the owner. Every urchin, or boy of larger growth, who passes by, seems intuitively to select the tree which bears the choicest fruit, and missiles of every description are hurled at its devoted head. I have an old apple tree in my orchard which stands near the road, the fruit is early and toothsome, and I verily believe that if the stones which have been cast at that tree by passers by, for the last ten years, should be piled up in a solid pile, they would make a very respectable Egyptian pyramid; when mowing in the vicinity of that tree I try to think of the last Sunday's sermon, of "Good will toward men and boys," but it's of no use, scythes were not made to cut cobbles.

If I can raise good fruit, I take pride in my proving it by *giving* specimens to those who may *ask*, but it does go against the grain to be called a stingy old curmudgeon because you tell one of this

class of highwaymen that you object to his clubbing your trees.

Now, as I do not want to pander to the taste of thieves, I wish to find out if there is a variety of apple which is not inviting to the taste, but not unprofitable, a cider apple for instance, which I can with safety set out in the row next to the road?

We have stringent laws for the protection of the sheep raiser, laws to protect the small, and game birds, and fish; why not have one to protect the fruit-raiser? He needs it if any one. It is not too late to agitate, so will you and your contributors show this matter up, and perhaps we may get a law some time that will be stringent enough to protect the fruit-raiser. WINTER HILL.

Nashua, N. H., March, 1867.

REMARKS.—Set young trees, and graft them with the best cider apple in your neighborhood. The Winter Green Sweet is one of the finest apples for baking, is scacely fit to use until February or March, and will keep until June. When growing, and until the time of gathering, it is about as "hard as a brick," and looks like a ball of green paint. A boy would eat the tree about as soon as the apple. In February, it begins to turn yellow, assumes a very rich golden color, and is sweet and delicious when cooked. It is a roundish-flat apple of medium size, and may be obtained of Deacon Tenney, of Chester, N. H.

A NEW APPLE ORCHARD.

I wish to set out an orchard of two hundred apple trees, this spring. Will you please inform me, through your paper, what kinds bear best in this State. Would you prefer to set small trees grown here, rather than large New York State trees?

Greenfield, Mass., March 11, 1867.

A SUBSCRIBER.

REMARKS.—You had better ascertain what varieties are hardy and produce best in your particular locality; these will be more likely to prove profitable than trees would brought from other distant places. The Baldwin is still a favorite; so are the Roxbury Russet, the Hunt Russet, Rhode Island Greening, the River, Williams' Early Red, Morrison's Red, Red Russet, Tolman's Sweeting, &c. Avoid the common mistake of setting too many varieties.

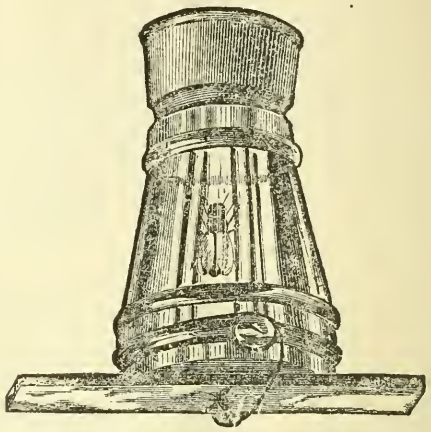
THE WAY TO RAISE THE CALVES.

Do not let the calf go the cow more than twice to suck; keep it entirely away from her until it is two weeks old, and then you may turn it out with her and be sure it will not trouble her. Feed the calf with the cow's milk as it is milked, until you wish to use the milk for butter, then skim the milk when it is sweet, warm it and give it to the calf. After the calf is four weeks old give it your sour milk or whey, and a little scalded meal, not more than a gill at a time to commence with. The calf will follow you to the pasture and back again at night as readily as your dog. A FARMER.

Royalston, Mass., March 19, 1867.

—Judge Robertson, of Louisiana, has recently made an elaborate report on the resources of that State, in which he expresses the conviction that her soil and climate are well adapted to the growth of wheat.

A CONVENIENT AND CHEAP MICROSCOPE.



The engraving shows a complete microscope, full size and exact form, constructed and patented by O. N. Chase, No. 9 Lagrange St., Boston, Mass. It is a handy instrument, useful in aiding the detection of counterfeits, in discovering the texture and character of fabrics, and in exploring the wonders of nature. The microscrope is one of the most useful instruments. It has been extensively employed of late years in detecting adulterations in food and other substances which could not be easily discovered by chemical analysis. To the farmer it is useful in ascertaining the quality of seed bought, and in studying the structure and habits of insects injurious to vegetation. To the merchant and business man it is an aid in testing the genuineness of bank notes, the quality of cloths, etc., and to all it is a source of elevating and instructive amusement.

This little instrument, although perfect in every part, is retailed at the low price of one dollar. See advertisement on another page.

THE WESTERN WHEAT CROP.—A writer in the St. Louis *Democrat* makes some observations on the coming wheat crop of St. Louis county which, as the weather has been similar, will probably apply throughout the West. He says:—

"Wheat was sown throughout the county to a larger extent than in any previous year. In the moist and warm ground it germinated and sprouted within four or five days, and continued growing until the frosts of the latter part of November, when it showed a robust stand, such as has not been seen for many a fall. The thick coat of snow (also grumbled at as a mat-

ter of course) now covering the ground is another blessing. That snow shelters our wheat as under a universal hot-house, and a good one, too, keeping the plant alive, but not allowing its growth, which is its best possible condition."

BLACK KNOT.

We have one cherry tree in our garden, which was a very small, unthrifty looking one when we come hither four years ago. It then had a few black knots on it, which I cut off, but I did no more, thinking it would die. Last winter I concluded to experiment, and in February I had the house slops poured around the roots, and continued till the buds started. When it blossomed it was a perfect mass of petals, and most beautiful to behold. It was the first time it had blossomed full since we owned it. It grew very fast, looked thrifty, and I thought I should have a good crop, till one day I thought I saw a large green worm on one of the lower limbs, but on closer examination, found the outside bark had burst, and what I supposed the worm was the bright green inside bark. I called for my husband to look at it, and we found several of the limbs burst in the same way, with no sign of bug or worm, or insect of any kind about the tree. The leaves and fruit were beginning to fall off, and we concluded it had been over-stimulated. My husband took his knife and scarred the bark of the body of the tree from the lower limbs to the roots, and before we left, it had split open an eighth of an inch, and the gash is fully half an inch wide, well barked over. The bursts which I have just cut off, in the form of black knot, have injured the tree some, but I hope by watching it closely and taking good care of it to have a nice tree of it yet.—*Mrs. E. C. McCloughny, Deposit, N. Y., in Tribune.*

Horses' Feet Require Moisture.—Nine-tenths of the diseases which happen to the hoofs and ankles of the horse are occasioned by standing on the dry, plank floors of the stable. Many persons seem to think, from the way they keep their horses, that the foot of the horse was never made for moisture, and that, if possible, it would be beneficial if they had cow-hide boots to put on every time they went out. Nature designed the foot for moist ground—the earth of the woods and valleys; at the same time that a covering was given to protect it from stones and stumps.—*Ohio Farmer.*

—Dr. Smith said at a late meeting of the New York Farmers' Club, that on the banks of the Nile there are multitudes of towers some ten feet high, on which are placed doves' houses, solely for the manure which is gathered and used for melon growing—the finest in the world being raised by this means.

FARMERS' GARDENS---No. III.

Proper Soil.

When the best *location* that circumstances will permit, has been secured, the great step will be to get such a soil as will best suit a majority of the plants we wish to cultivate. It is a mistake to suppose that some special soil is indispensable to success. There is probably no farm in the country, that does not afford a spot near its buildings, which, by skilful management, may be made to produce all the varieties of fruits and vegetables that are adapted to the climate. But there is a diversity in them, and if we do not find such as we desire, prepared by nature for our use, we must do it by art. Soils perform at least three grand functions in reference to vegetation. Prof. Johnston says they "serve as a basis in which plants may fix their roots and sustain themselves in their erect position—they supply food to vegetables at every period of their growth—and they are the medium in which many chemical changes take place, that are essential to a right preparation of the various kinds of food which the soil is destined to yield to the growing plant."

The character of the soil, by which we mean its capacity to afford a habitation to the plant appropriate to it, and at the same time to furnish the required aliment, is a matter, as all gardeners must see, of the first importance. It should be such as to afford sufficient moisture to the roots and to admit the air to penetrate it freely. The soil consists of decayed vegetable matter, sometimes mixed with particles of rock reduced to fine pieces by the action of the atmosphere and of water, and sometimes by the roots of plants. It is unnecessary to describe the different kinds of soils in regard to adaptation to supplying moisture.

Second. It should afford a supply of carbonic acid. This is furnished by the decay of vegetable matter, or by absorption from the atmosphere. This faculty of absorption is assisted by mixing with charcoal, muck, or other

matters having great absorbing power. Charcoal consists chiefly of carbon, and it has been found that plants will prove more luxuriant in soils containing a large proportion of carbonaceous matter, if well supplied with water, than in any other soil. Charcoal is not only a medium of absorption, but when water is present, it is decomposed, and its oxygen, combining with the carbon of charcoal, carbonic acid is furnished to the vessels of the plant.

Third. The soil should be capable of furnishing a supply of ammonia to the roots. This is also much assisted by the presence of gypsum or charcoal, which absorb it from the atmosphere. The usual mode of supplying it is by the addition of animal matter from the stable. Ammonia imparts its nitrogen to the plant, and it is to this that much of the nutritive value of the cereal grains and many esculent vegetables is due.

Fourth. It should contain those mineral ingredients which are necessary to the growth of plants. These, if wanting, must be supplied. The usual mode of doing this is by the mixture of other soils, as will be presently stated. This is also advantageously resorted to when the soil is too little or too much retentive of moisture, in consequence of being too loose or sandy, or calcareous, or too compact and stiff. This is called *tempering the soil.* When a soil is too loose and porous, or too stiff, the mixture of the opposite kind in just proportions will bring it to a more suitable condition. In this way a body is given to those lands that are too porous, and those which are too heavy and tenacious are made more light and loose. This process brings no nutriment to the plant directly, but only mediately, by attaining a retentive power in the right degree, and thus furnishing nutriment by a proper supply of water; and it also acts favorably on the health and quality of the plants.

A decidedly *gravelly* or *sandy* soil is unsuitable for garden purposes. So is a *heavy, clay* soil; such a soil would be wet in its natural state, and a wet soil is a *cold* one. But all these may be so altered and attempered, by drainage and combinations of materials, as to make such a *sandy loam* as will meet all the wants of common plants. Moist, heavy soils, that rest upon clayey subsoils, are better adapted to pasturage, mowing fields and the production of trees, and can only be made suitable for a vegetable garden by thorough draining, and then by trenching or deep plowing, and the intermixture of sand and muck. Without these helps, such land is too wet in rainy seasons, and is liable to become hard upon the surface during dry seasons, and in either case is unfavorable for the free growth of plants. But "by the removal of the water, the physical properties of the soil are in a remarkable degree improved. Dry clay can be easily reduced to a fine powder, but it naturally, and of its own accord, runs together when water is poured upon it. So it is with clays in the field. When wet, they are close, compact, and adhesive, and exclude the air from the roots of the growing plant. But remove the water and they gradually contract, crack in every direction, become open, friable, and mellow, more easily and cheaply worked, and pervious to the air in every direction." Thorough drainage, then, and the intermixture of sand and coarse and warming dressings from the horse stalls will bring a heavy soil into one upon which any plants will grow.

There are many farms made up entirely of sandy plain lands, upon which there is no soil of a different character. When such a soil is highly cultivated it will bring certain early vegetables to perfection, but fails to mature crops that require a longer growth. It may be amended, however, by the application and complete mixture of clay and muck. These should be hauled upon it in the autumn or winter, so that frosts and rains may pulverize and sweeten them, and then be thoroughly plowed and otherwise mingled with the sandy soil. Under such a practice, and with suitable manuring, this forms a *sandy loam,* which is the best soil for all garden purposes. But it may become necessary to drain even a sandy soil. If springs rise to the surface, as they frequently do, it must be drained. On many soils water is obtained in the wells by digging only eight or ten feet, because the sand rests upon a hard or clayey bottom. In such cases, draining is indispensable to success. The action of manure on a light, sandy soil, is to increase its cohesibility, its capacity for absorbing and retaining moisture, and to render it more compressible. Applied in sufficient quantity, it communicates an unctuous or pasty condition, and renders it less likely to be injuriously affected by the sudden atmospheric alternations of wet and dry. It also constitutes a better medium for the roots of

vegetables, which, in a light and excessively porous soil, do not take hold with sufficient firmness.

RULES FOR BUYING WOOL.

At a union convention of the Michigan Wool Growers' Association, Wool Buyers and farmers generally, the following rules for preparing wool for market were adopted:—

1st. Sheep should not be allowed access to the straw-stack, especially of barley or bearded wheat.

2d. All sheep, except perhaps bucks, should be well washed, if practicable, in a running stream, and as early in the season as the weather will permit.

3d. Sheep should be shorn, weather and other circumstances permitting, within six to ten days after washing.

4th. At the time of shearing, the fleeces should be carefully rolled up as snugly as practicable, without being too tightly pressed, wound with light colored strong twine, put twice each way around the fleece, carefully excluding all dead wool and unwashed tags.

In place of propositions to discount one-half on unwashed rams' fleeces, and one-third on other unwashed wool, which were rejected, the following was agreed to:—

Reasonable deduction should be made on unwashed or otherwise unmerchantable condition—this deduction to be determined, however, according to the quality and condition in each case, and not by any arbitrary rule of deduction to be applied indiscriminately to all cases.

In the course of the discussion upon the adoption of the above, Mr. Stuart of Kalamazoo said he thought the rule deducting one-third on bucks' fleeces, simply because they *are* bucks' fleeces, was arbitrary and unjust. He had a mixture of buck's and ewe's fleeces, and if any wool-grower or buyer could distinguish one from the other, he would give him the whole crop.

This Wool Growers' Association elected the following officers for the year:—

President, Hon. C. E. Stuart, Kalamazoo; Vice President, Sanford Howard, Lansing; Treasurer, W. G. Beckwith, Cassopolis; Secretary, W. J. Baxter, Hillsdale; Ex. Com., C. W. Green, J. R. Hendryx, L. S. Wood, Charles Rich, N. Pugsley.

IRRIGATION.—A correspondent in West Townshend, Vt., gives us some particulars of the success of Mr. J. H. Kimball, in the irrigation of about three acres of a gravelly and sandy soil, which was previously almost too poor to grow weeds. A tannery which stood on the stream from which the water was taken may have added something to its manurial value. Last season, which was the second or third of the irrigation, five tons of hay, fifty bushels of corn and seventeen of beans were harvested as field crops, besides seventeen bushels of turnips and a liberal supply of vegetables, which were grown on a portion of the land occupied as a garden.

EXTRACTS AND REPLIES.

CHEMISTRY AND FARMING.

I have heard that a thorough knowledge of chemistry is important to successful farming. Please to state through the NEW ENGLAND FARMER the reasons why it is so. Most of the farmers I ever saw knew little or nothing about chemistry. How much will books sufficient to obtain a fair knowledge of it, cost? ROBERT.

Easton, March, 1867.

REMARKS.—There can be no doubt, we think, that a thorough knowledge of chemistry is important to successful farming. But that it is absolutely necessary, we do not believe. There are thousands of excellent farmers who have no *exact* knowledge of chemistry—but still would find a "thorough" knowledge of that science important to them in their farming operations. Indeed, a very large majority of all farmers have very little knowledge of chemistry, and yet they succeed well and honor the calling. Some knowledge of chemistry would not only prove profitable to the farmer in a money point of view, but it would become a source of pleasure to him, and kindle in his mind a still greater desire to understand better the wonderful things that surround him in all his labors.

The best book for you is "Elements of Agricultural Chemistry and Geology," by Prof. J. F. W. Johnston. Costs $1.50.

CHANGING SEED—SALT FOR WHEAT.

Having promised to write about the cultivation of wheat, and the importance of changing seed, I must say, in the first place, that wheat is of all grain the most valuable. It is a very hardy plant, sustaining alike without injury the frosts of winter and the heats of summer. It delights most in a stiff, mellow, well pulverized soil, and very successfully follows beans, clover, peas, vetches or corn. On very light soils it is not profitable. Nor does it succeed well after potatoes, because this root is exhausting to the soil and renders it light and porous. When this succession is adopted, a large quantity of manure should be used to the potatoes.

The smut, which often proves fatal to wheat and other grain crops, appears to be occasioned by the peculiar state of the seed, and in England various saline, alkaline and other steeps are used to remove this infection. When, however, it becomes very much subject to this disease, it is attributed to sowing one kind of seed upon the same quality of land too long. Therefore English farmers have so much faith in the beneficial effects of a change of seed, that they sometimes will go a great distance for that which is fresh. They are also very particular to have seed wheat clean of all foul seed, &c. They generally make it wet with old chamber-lye, and then dry with quick lime.

I adopted the same mode here, but sowed one kind of wheat for seven or eight years. I thus got considerable smut among it, and it also deteriorated considerably. My straw was good, ears long,

but the berry had become rather smaller than it was when I first bought the seed. I did not like to part with the wheat, as it made excellent flour, and I did not know where to get any of the same sort. I therefore tried another mode of preparing my seed. Procuring a sieve coarse enough to let the small seeds and other refuse matter through, I get it thoroughly clean. Then wet it with water, and add to four bushels of wheat one bushel of salt, and mix them well together. Let it stand for two days before sowing. When ready to sow, I mix in ashes until the wheat will separate freely. This course I have pursued for the last two years, and have not seen any sign of smut, weevil or worm This leads me to think that salt is beneficial to the wheat as well as to the land. Last year I had some as handsome wheat as any one could wish for. I think if we would sow from one and a half to two bushels of salt to the acre, as we might easily do when sowing the seed, it would greatly benefit the soil. Wheat should be at once cut on the appearance of blight; as fields thus harvested will often produce a fair crop, which, if left to stand, would amount of little. E. HEBB.

Jeffersonville, Vt., March 22, 1867.

PRICE OF MILK.

As the time is now near at hand when farmers who produce milk for the Boston market, will engage their milk for the coming six months, it becomes a matter of interest to ascertain what price we are likely to receive for it. We all very well know that during the past few years the value of labor, hay, grain, pasturage, stock, tools, rate of taxation, and every thing connected with the production of milk, have greatly increased. This renders it necessary that we should obtain a fair living price for what we have to sell.

Heretofore, the producer has had very little voice in fixing the price at which he has sold his milk. The milkmen combine together, and say what they will pay, thus kindly saving us any trouble whatever in the matter, although we feel that thus far they have obtained our milk at far less than the actual cost of producing it. So long as we continue to go on in this way, so long will milk-raising continue to be a losing business. Why should we not have annually a Milk-raisers' Convention, with delegates from each town, upon the various milk routes leading into Boston, and establish a fair scale of prices, varying according to the distance from the city? Certainly it does seem as if some measures should be taken to bring about a different state of affairs. W.

Lancaster, Mass., March 22, 1867.

REMARKS.—We publish the above contrary to our rule which requires correspondents to give us their names, not to be published against their will, but as a guarantee of the good faith of the writer. The remarks of "W." upon another subject, we must decline to publish until the above rule is complied with.

FANEUIL HALL MARKET.

Is it proper to call the long stone Market "Faneuil Hall Market," or "Quincy Market," and by which name it is called in the city Records? As there is a difference of opinion upon the subject in our village, I thought I would like to know the facts in the case. P. B. B.

North Bridgewater, Mass., March 23, 1867.

REMARKS.—In 1740, Peter Faneuil, a wealthy citizen of Boston, offered to erect a suitable building for a market, and give it to the city. The building, when erected, contained a town hall in addition to the original proposition of a market. In 1824, more room being required for market purposes, leave was granted to extend Faneuil Hall Market. In this movement Josiah Quincy, then Mayor of the city, took an active part. Hence the "long market," as it is sometimes called. This building, also, in addition to the stalls on the ground floor, contained a spacious upper floor. The occupants of this story of the new building, from respect to the public spirited mayor, hung out their "shingles" with the inscription "Quincy Hall," in large letters. Hence, the confusion of names. The official and proper designation of the market, however, is Faneuil Hall and not Quincy. When the new building was first erected, there were not occupants enough for the whole, and the stalls under Faneuil Hall were vacated, and leased for other purposes. A few years ago, when the *long* market came to be *too short* for the increasing business, the original Faneuil was refitted, and is now occupied as a market according to the intention of its founder. Mr. Charles B. Rice, Superintendent of the market, informs us that the stalls in the original building are distinguished in his official reports as the "New" Faneuil Hall Market.

WATER CRESS.

Enclosed I send you a root that I call water cress. Can you inform me through the FARMER if I am right, and is it sold in Boston Market?

A SUBSCRIBER.

New Bedford, Mass., March 5, 1867.

REMARKS.—The plant sent is much smaller and more delicate than the water cress. In his excellent work, "Vegetables of America," Mr. Burr gives the following description of the water cress—*Sisymbrium nasturtium. Nasturtium officinale.*

"When in blossom, the plant is about two feet in height, or length; the leaves are winged, with five or six pairs of rounded leaflets, and, in deep water, are often immersed, or float upon the surface; the flowers are small, white, four-petaled, and terminate the stalks in loose spikes; the seeds are very small, reddish-brown, and retain their powers of germination five years. Nearly a hundred and twenty thousand are contained in an ounce."

If our friend will give us his full address we will send him a sample of the water cress sold in the market, and quoted in our report.

WHEAT IN NEW ENGLAND.

Several encouraging articles upon wheat-raising have appeared in the FARMER the past few weeks. That from Isaac W. Hutchinson, Esq., of Templeton, Mass., is worthy of special notice. Truthfully he says, "wheat ought to be raised by every farmer;" "that most of us can produce our own flour," &c. He says, "I seldom fail to raise less than 20 bushels to the acre and have raised 35."

This has been my urgent, persistent doctrine to the farmers, for the past twenty years—I yet hope and expect to see the wheat fever pass through New England, as the fire sweeps the Western prairies.

It is an idle, sluggish timidity, (excuse the remark,) that keeps the farmer from doing this first special duty to himself and his family. Why not depend upon the West for all his corn and small

grains? Wheat is a hundred times more valuable than all other small grains in the aggregate. It is a crop that offers a double advantage over any other grain, as it may be sown either in the spring or fall. One or the other is almost *sure*—perhaps both. With early sowing, to the depth of three inches, there is more certainty of its being well rooted and not affected by frost, as a winter grain. The best flour comes from the winter wheat. Four bushels is equal to a barrel of flour to the farmer, netting the comfortable little sum of $4.50 to $5.00 a bushel when flour is $16 to $18 per barrel; that being the price I pay for best quality.

It is sincerely to be hoped that your correspondent, Mr. Hutchinson, being fairly in the field, will be unceasing in his labors upon this vital subject. It is the right source for information. His communication is practical, sound, and of the highest value to every man who owns a farm.

The States of Ohio, Illinois and Pennsylvania have been large buyers of wheat, this season, owing to short crops. So it may occasionally be with Eastern farmers. We do not always succeed with any crop.

Why do not the wheat raisers tell their experience, as Mr. H. has done? It would encourage many a brother farmer to go and do likewise.

Brooklyn, L. I., March, 1867. H. Poor.

CANKER WORM PREVENTIVE.

Last year a person came along wishing to sell a preventive for canker worms. It was in the form of a liquid, which was to be put into a hole bored into the sap wood, and plugged up. It would infuse itself into the foliage and the worms would not eat it. As no one would buy, he made the application to two trees of my neighbor's. Those escaped the ravages, while the other trees were stripped. I would like to procure some of it.

Stratham, N. H., March 25, 1867. S. D.

Remarks.—The idea of impregnating the sap of trees with sulphur, calomel, or other offensive or deadly matter, to protect the foliage from insects, is a very old one; and statements of the success of such doctoring, occasionally go the rounds of the papers. As both calomel and sulphur are insoluble in water, we suppose they will prove so in the sap of the fruit trees to which they are applied. But if two trees have been protected by the travelling peddler's liquid, we advise him to ride the circuit again, or let "S. D." know where he can obtain a bottle of his preventive.

LARGE CROP OF ONIONS.

I observed in your paper of January 5th, a statement that Mr. G. O. Gill, of West Medway, had raised seven bushels of onions upon two square rods of ground. I have myself done much better than this; having raised from a piece of land measuring 58 by 25 feet, a little more than five and one-half square rods, thirty-two bushels of onions, or at the rate of more than 900 bushels per acre.

Lyman Hewins.

Sharon, Mass., March 19, 1867.

FLOUR OF BONE—SHEEP MANURE.

Last season I purchased 90 pounds of the bone flour. Applied it in the hill when planting corn, by using flour of bone in one row and superphosphate in the next row, and so on. The yield from the rows with the superphosphate was 50 per cent. greater than from those with the flour of bone—the field being manured and otherwise managed the same in all respects.

Will some of our old experienced sheep farmers give us, in the Farmer, the best method of treating sheep manure from the first move in the barn to the last in the ground. Sometimes I have forked mine over when it began to heat pretty well, then cart out and plow in; at other times I have moved it direct from its solid state in the pen to the land, and spread and plowed in. Neither way is entirely satisfactory. Inquirer.

Holderness, N. H., March 25, 1867.

AN EXCELLENT SOAP.

I have used it for more than fifteen years, and know its good qualities for those who have hard, rough, and dirty hands.

I take 4 pounds castile soap, 4 pounds best yellow soap, cut in thin slices and put it into a kettle with a little soft water, over a moderate fire. When it is melted, I put in the oil of three beef's galls, and one pint of glycerine oil; stir well together, then pour it into pans about an inch deep. I then stir in pumice stone, pounded fine, until it is as thick as dough. When nearly cool cut it into squares. For more delicate hands the pumice stone may be sifted. Age improves it.

F. E. Bigelow.

Concord, Mass., March 24, 1867.

INVERTED WOMB IN SHEEP.

I wish to inquire through the Farmer, what the cause is, and what will cure sheep that "cast their weathers?" I had one last winter, and two this winter; one is so bad I have to keep her sewed up. I have washed them in alum water, and milk and water. Will some one give me some information what to do for them? F. H. Hoit.

Newark, Vt., March, 1867.

Remarks.—You have probably looked at Randall's book. If the alum water does not succeed, why not try Youatt's—and Randall recommends it, too—plan of "tying a strong ligature round the protruded parts, as near to the mouth of the vagina as possible. The uterus will slough off in the course of two or three days. There will be no bleeding, or the slightest inconvenience, and the ewe will become as healthy and as fat as any of the flock." Of course, she will not breed any more.

ENCOURAGING.

With pleasure have I perused your valuable paper and pamphlet. It brings me back to years that are past, when I used to find so much pleasure and satisfaction in looking over the old New England Farmer, printed in your city by Joel Nourse, and edited by Mr. Brown, both of whom I see are interested in the present paper. I have a large pile of the old ones, that have been looked over very many times by me and mine, with great pleasure, wishing there might be another one of the same kind started, and it is here before me in the same old form. I hope it may give as good satisfaction to all who read it as did the former one. Wm. H. Black.

Ellsworth, Me., 1867.

Remarks.—Thanks, Mr. B., for your encouraging appreciation of our labors. Nothing that is reasonable shall be left undone by us to make the Farmer a valuable paper to the cultivators of the soil, and to mechanics also.

For the New England Farmer.

SOILING MILCH COWS.

Mr. A. W. Cheever:—Sir,—I saw by the New England Farmer, a few months since, that you are in the habit of soiling your stock for the purposes of butter-making. Will you please give me your plan of soiling, whether you keep your cows up all the time, or let them run in the pasture a part of the time in summer for exercise; also how much grain you feed, and what kind you consider best for butter.

I am on a place that has poor pastures, and I wish to bring the farm up in the best manner. I cannot pasture more than a quarter of the number of cows I might winter. I am not situated so as to sell milk, therefore must make butter.

Does the soiling system pay, in your opinion?

If you answer the above questions, and give me such other information as you think best, you will greatly oblige a brother farmer. Respectfully yours, R. P.

Holliston, Mass., March 13, 1867.

Mr. R. P.:—Dear Sir,—Yours of the 13th is at hand, and I take the first opportunity to answer as well as I may some of your questions. According to the dictionary, *soiling* is the act or practice of feeding cattle or horses with fresh grass or green food cut daily for them, instead of pasturing them. Strict soiling would hardly allow the use of grain of any kind, much less any dry or cured fodder, neither any feeding in the pastures.

I have never practiced or advocated that kind of soiling for the purposes of butter-making. If the object were to obtain the largest amount of milk for sale, without much regard to quality, it might be, and probably in many sections of the country it is, the best mode of keeping cows in summer.

During the last summer, I had occasion to visit the milk farms of Mr. T. P. Denny and Mr. Humphreys, of Brookline, who each keep from twenty-five to thirty cows, and who sell all their milk. They feed green food principally through the summer season in preference to pasturing. Several of their best cows were at that time giving twenty quarts each per day —a quantity much above what could be obtained on dry feed. As to pasturing milk cows, these gentlemen say it is well enough when the pastures are in their best condition and are near the buildings. Distant pastures require of the cows too much travel, and no pasture is in its best condition but a very few weeks in the year.

The milk farmers near the cities seem to be driven to the soiling system, from necessity, and they obtain uniformly larger quantities of milk than they could by any other method. As I make butter from my milk, I care as much for quality as quantity; and in my own practice, when I use the term *soiling*, I mean by it stall feeding in opposition to pasturing. And I believe the time is soon coming when this system of feeding milch cows for the dairy, must be generally adopted all through the Eastern part of our State, and around the cities generally throughout New England.

The style of farming has changed very much since our grandfathers were on the stage. They cut off the forests, burned the wood, except enough for fences, sowed rye and grass seed, and then pastured. The land being new and well covered with ashes from the burned timber and wood, produced for many years large crops of good pasture grass. At that time land was cheap; not worth much more than the cost of clearing; and the farmers in estimating the cost of a pound of butter or a quart of milk, hardly took into the account anything for pasture feed. Only twenty-five years ago, I saw a promising heifer, two and a half years old, sold for $10.50, from a drove being peddled out on the way from Brighton to Rhode Island. Pasturing must have been of little account where that heifer was raised. But that time has gone by, not soon to return. The lands of New England are exhausted of their original fertility, and a different system of farm management is called for. Some of my neighbors are still anxious about their old worn out pastures. They mow the bushes every fall, and occasionally plow, manure lightly, crop heavily; first with potatoes, then oats, next hay a few years, and then pasture thirty or forty years. At the end of the rotation the land is considerably poorer than at the beginning.

The one great trouble with the pasturing system for us at the present time is, that we cannot make and save enough manure from the stock our farms will keep to enable us to retain the present condition of the land, but are constantly making it poorer. I believe it is this system that has caused the gradual running out of the farming lands of the country, for the past two hundred years. And I should think when farms are every week advertised in the papers to be sold for what the buildings would cost, it was an indication that we had nearly reached the bottom.

I gave up the idea of depending on pastures for milch cows nearly twenty years ago, and have not turned a furrow or spread a shovelful of manure on any pasture, with one exception, since that time. My general practice has been to commence near the buildings, and, as far as I go, to remove all the fences and rocks, as fast as seems reasonable; draining where necessary, manuring very heavily the best grass land, sowing thickly with grass seed alone, and cutting all the grass possible on the ground gone over. The outside lots were mowed as long as they produced sufficient to pay for cutting, then turned out to pasture. Pines, birches, and other kinds of forest trees, were allowed to grow where I did not intend to plow. Thus, when the land will no longer produce grass, there will be growing a crop of wood.

You say you cannot pasture more than a quarter of the stock you can winter. Suppose you can winter ten head and wish to keep that number. If you will immediately turn out

some of the poorest of your mowing, perhaps you will be able to keep ten with what pasture you will then have, by feeding hay in the stall night and morning as needed, till the first of July. Then feed new hay or grass cut every day, till the first of August, letting the cows get their dinner in the pasture. By this time you will have corn fodder ready to cut, if you will plant it early enough this spring. If planted at suitable times and in sufficient quantity, you ought to have that as a principal feed for two months or longer. At this time you might perhaps keep the cows entirely out of the pasture, saving all the manure they will make. If, by the time the frost has ended the green fodder season, the pastures have thrown up a last bite for the cows, they may be turned in again for a short time for their dinner, feeding plenty of good hay night and morning. If no grass is in the pasture at this time, you may as well call the soiling season ended, unless you can find in the mowing some spots from which you can cut rowen.

If you adopt this plan, you will need a cellar under the stable, into which the manure can be dropped. Shovelling fresh manure in summer out of a stable window, from cows fed on green food, is not a pleasant kind of employment. You ought also to provide yourself in some way with dry muck, loam, or sand enough to absorb all the liquid part of the manure. The opportunity you will have of making from two to four times the manure you now do, you will find to be one of the principal advantages of the soiling system.

Without plenty of manure very little can be accomplished in this part of the country, at the present time, but with it almost anything can be done that may be desired in the way of farming.

You ask how much and what kind of grain is best for butter cows. This is yet an open question. Some good farmers are now contending that *early cut* English hay is the best feed, next to grass, a cow can have. But with such hay as most farmers use, and especially when feeding green food, like corn fodder, I believe some grain is necessary in order to keep the cows in good flesh while giving a large amount of milk. I usually feed two quarts of Indian meal and from four to six quarts of wheat shorts, per day, to each cow, varying the quantity somewhat according to the age and condition of the animal. I believe a fleshy cow may be allowed all the shorts she will eat without being injured. A lean cow must be brought to a full grain diet very gradually. One thing I have noticed about feeding shorts is, that cows will never touch a bone, or ever be caught gnawing boards or old leather, if they have long been fed with plenty of shorts.

You ought to obtain Mr. Quincy's little work on soiling, and you would do well to spend a day or more in visiting farms where the system has been adopted. I have never yet known a man to adopt the soiling system and afterwards go back to pasturing.

To your last question, "Does the soiling system pay?" I answer, that where grass does not grow spontaneously all through the summer season, in sufficient quantities for the full needs of the stock, this system of soiling, or stall feeding in a greater or less degree, is the only resort, and if it won't pay, it must be because the whole business of dairying won't pay. If it will pay to keep stock at all, it will pay better to keep it well. Believe me, Sir, very truly yours, A. W. Cheever.

Sheldonville, Mass., March 20, 1867.

For the New England Farmer.

GRAPES.

Messrs. Editors:—The article on grapes by S. S. Chamberlin, and your remarks upon his vines, their fruit, and the home of the owner, *and its location*, are very interesting and suggestive.

That part of Mr. C.'s article in which he speaks of wine—its value and cost, and its use to the poor and the sick, I must confess myself unable to appreciate, as I have never used a quart of wine in my life; but his remarks on growing grapes for their fruit are certainly timely and excellent, and will, I hope, be very useful. He certainly understands growing grapes; and, though many will call his statement an exaggeration, I accept it as a sober truth; because I can name others who have come so near to him in the weight of their grapes, per vine, on an average, of the same variety, that I have no reason for being surprised. The secret of his success lies in the location and aspect, and in the care he takes of his vines. Under the same conditions, many other varieties now generally discarded would well repay the owner. But, as Mr. Chamberlin says, so I say, I wish it to be understood I am not referring to '*vineyard modes*.'

In my articles on "Grape Fever," I did have reference chiefly to "vineyard modes," yet, as then, I now say, "no doubt all these varieties are cultivated with much satisfaction by persons of taste and experience, and in many cases the fruit is worth double the cost of raising it." It is, however, none the less true that those varieties, including the Isabella, are not safe vines for open or *field culture*;—they must be well sheltered and the aspect good, and the location high and free from early frost. On this point Mr. Chamberlin observes, "I am satisfied that these vines would often fail to ripen their fruit by the frost striking them, if they had been out in my fields." But under the condition he names, "the frost does not have a chance to injure them so early by three or four weeks." The time, he says, "they usually ripen, is about the middle of September."

Mr. Chamberlin has an unusually favorable location, or his Isabella grapes would not

ripen before the last of September. Here, nineteen miles south-west of Boston, and about one hundred feet higher than that place, Isabella grapes are not fit to gather for market before the time I have mentioned. Within a few rods of where I am writing this, a vine of that variety trained on the south of a building, and having, by estimate, two hundred and fifty pounds of fruit on it, was struck with frost to the destruction of its fruit three weeks after my Hartford Prolific, and two weeks after my Concord grapes had been completely ripened and sold in Boston; and these were grown in an open garden on a trellis. I wish friend Chamberlin would try one of each of the varieties I have named, to see how soon in the season they would ripen at his place; if he will, as I am coming to Manchester in April, I shall be happy to make him a present of some vines. I think they will ripen their fruit in his fields as soon as his Isabellas will ripen theirs on the barn.

I do hope he will accept my small gift as a token of my confidence in his ability to care for the vines properly; and also, because I am satisfied that he would then recommend Hartford Prolific and Concord to his neighbors who may not have such a good place as his to raise Isabella grapes.

Will not some others give their experience, and thus encourage the growth of a fruit, which I and friend Chamberlin have found to be so profitable. JOHN FLEMING.

Sherborn, Mass., March, 1867.

VARIETIES OF STRAWBERRIES.

As chairman of the Massachusetts Horticultural Society's Committee on Fruits, J. F. C. Hyde, Esq., gives the following brief review of the present estimation in which the various kinds of strawberries are held by the practical cultivators of this fruit in the vicinity of Boston:—

"Hovey's Seedling is still the best variety of its season. Jenny Lind is a favorite early sort. La Constante has been gaining friends, though we fear that for ordinary field culture it will not succeed: Brighton Pine still holds its place, especially among market gardeners. The Buffalo Seedling and Russell's Prolific are not valuable varieties. The French Seedling is soft and poor, and of no value as a market fruit. Some fine specimens of the Agriculturist were shown by E. A. Brackett, of Winchester, who has been quite successful with this variety. In point of quality, it is not up to our well known varieties, but may, like the Wilson, to which it is superior, be grown for market. It is a good grower and bearer. The Monitor is a soft and worthless variety. The Brooklyn Scarlet is acid, small or medium size, and of poor quality."

From Macmillan's Magazine.

SEASONS.

BY CHRISTINA G. ROSSETTI.

O the cheerful budding-time!
When thorn-hedges turn to green,
When new leaves of elm and lime
Cleave and shed their winter screen;
Tender lambs are born and "bar,"
North wind finds no snow to bring,
Vigorous Nature laughs "Ha, ha,"
In the miracle of spring.

O the gorgeous Blossoms-days!
When broad flag-flowers drink and blow,
In and out in summer blaze
Dragon-flies flash to and fro;
Ashen branches hang out keys,
Oaks put forth the rosy shoot,
Wandering herds wax sleek at ease,
Lovely blossoms end in fruit.

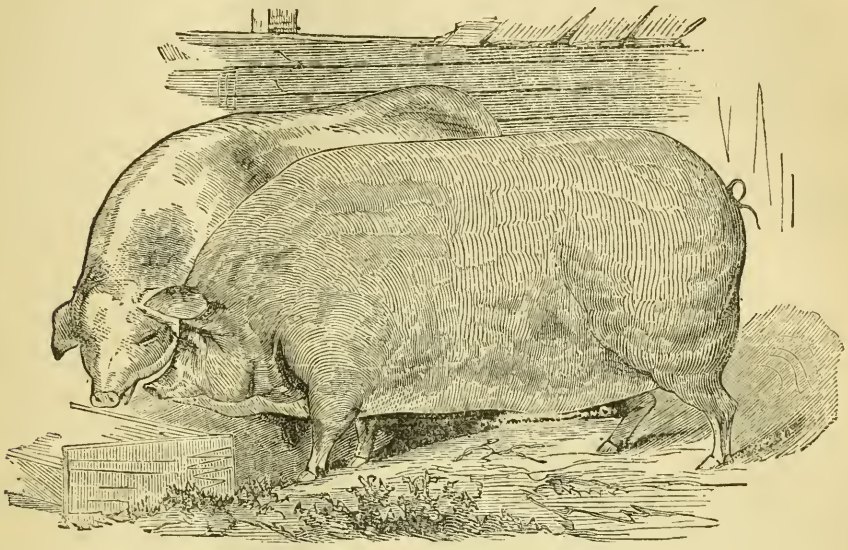
O the shouting Harvest-weeks!
Mother earth grown fat with sheaves
Thrifty gleaner finds who seeks;
Russet-golden pomp of leaves
Crowns the woods, to fall at length;
Bracing winds are felt to stir,
Ocean gathers up her strength,
Beasts renew their dwindled fur.

O the starving Winter-lapse!
Ice-bound, hunger-pinched and dim;
Dormant roots recall their saps,
Empty nests show black and grim,
Short-lived sunshine gives no heat,
Undue buds are nipped by frost,
Snow sets forth a winding-sheet,
And all hope of life seems lost.

WOOL.—The manufacture of knit woolen goods has been greatly stimulated in this country by the high cost of importation since the war, and it is now estimated that 400 sets of machinery and 40,000 hands are employed in this branch of industry in the United States, producing goods to the value of about $20-000,000 per year. The New England and Middle States nearly monopolize this business, New York taking the lead with the extensive mills at Cohoes.

PURE ITALIAN BEES are not plenty in this country. None are absolutely pure whose workers have *less than three yellow bands*. Queens and drones from mothers of undoubted purity, sport in color and are not relied on as a test of purity. But queens bred from pure mothers must produce workers with three yellow bands, to be pure. This is the test of purity now adopted by the best bee-keepers, not only of this country, but in Europe.—*Rural New Yorker.*

FRUIT PROSPECTS.—A correspondent of a New Jersey paper writes that he has made a wide circuit among the peach orchards, and finds the prospect good in most of them, though some are much injured. He finds strawberries raspberries and blackberries in first rate condition, and promising well for the season. Apples and pears are also good.



CHESTER WHITE SWINE.

These swine, known also as Chester County Whites, Chester Whites, &c., derive their name from Chester County, Penn., where they are said to have originated, some forty years ago, by a cross between the best native stock of that section and a boar imported from Bedfordshire, England, by a Capt. Jeffries. Sanford Howard describes the old stock as follows: Head large; the nose or snout thick, but not long for the size of the animal; the ears large, thick and flapping; the body rather long, and tolerably round; the back generally hollowing, frequently with a considerable depression immediately behind the shoulders; the legs generally large in proportion to the size of the body, and in fat animals frequently giving way so much as to bring the dew-claws fully to the ground; the skin rather thick, and covered with long, wavy bristles. He then remarks that many of the hogs now called Chesters, or Chester Whites, have upright and somewhat thin ears, less bristles, thinner skin, and less coarseness of bone than the old stock, plainly indicating a cross with some finer race.

This breed appears to be attracting much attention in many parts of the United States at the present time, and the above cut, from a photograph of a pair, will give a good idea of their outside show.

AGRICULTURAL ITEMS.

—The price of flour was quoted in California, Feb. 21, at $4.75a$5.25 per bbl.; hay $8a$14 per ton.

—Edwin Hammond, of Middlebury, Vt., recently sold six ewes to go to the West for $600 apiece.

—The California *Farmer* says that nursery men are doing a good business in that State, as there is a general desire to improve everywhere.

—Mr. James O. Sheldon, of Geneva, N. Y., lately purchased of Samuel Thorn, forty short horn cattle of the Duchess and Oxford families at an average of over $1000 per animal.

—Maple orchards are of great value to farmers. More attention should be paid to growing young maples by nursery culture or otherwise. They readily start from the seed.

—Mr. Sullivan Fisk, of Compton, C. E., last season raised 525 bushels Davis Seedling potatoes from one acre of ground. Thirty loads of manure, were spread on oat stubble in the fall, and plowed in. In the spring, the land was again plowed, harrowed, and furrowed about three inches deep, three and a half feet apart. Large potatoes were cut into three pieces each, and *one* piece dropped in a hill, the hills fifteen inches apart. They were hoed twice in a thorough manner.

Ladies' Department.

DOMESTIC ECONOMY;

OR

HOW TO MAKE HOME PLEASANT.

BY ANNE G. HALE.

[Entered according to Act of Congress, in the year 1856, by R. P. Eaton & Co., in the Clerk's Office of the District Court for the District of Massachusetts.]

CHAPTER IV.

HOUSE PLANTS, AND THEIR CULTURE.

Heliotrope.—This word is derived from the Greek, and signifies *turning to the sun*, which was supposed to be a peculiarity of the genus. The Latins called the plant Verrucaria, because the juice, mixed with salt, was said to be efficacious in removing warts. Three species have been brought from the south of Europe, one in 1640; but the most familiar have been introduced from Peru. The heliotrope is prized more for its fragrance than its beauty, though Voltaire's, which has deep, purple flowers, is certainly handsome. It is increased by cuttings, and should receive treatment similar to that given the fuchsia.

Hoya, or Wax-plant, took its generic name from Thomas Hoy, a celebrated English gardener. This genus is composed of climbing plants, bearing both leaves and flowers of a waxen appearance. The leaves are deep green; the flowers are either blush, or cream colored, and are very fragrant; they hang in bunches and secrete a honey-like juice. The best method of propagating this plant is by layers, though cuttings are sometimes started in the pot of the parent plant. The hoya should have a soil of peat, sand, and loam, in a pot drained with cinders. It needs little water, but much heat; and should never be placed out of doors. If watered occasionally with liquid manure the soil will require no renewal for several years. Do not take off the flower-stalks, they bloom anew, year after year. Set the pot on a high shelf, near a window; and train it so that it receives the warm air at the top of the room. Let it droop over pictures, and about the window—it will be a very elegant decoration, The hoya is a native of the hottest parts of Asia.

Hyacinth.—The old heathen poets say that Zephyrus, prompted by jealousy, killed Hyacinthus, the friend of Apollo; and from the blood of the youth sprang this flower, the petals of which were inscribed with his initial, which is also the Greek exclamation of woe, *Ai, Ai*. It is in allusion to this circumstance that Milton, in his lament over Lycidas, speaks of the hyacinth as the "flower that sad embroidery wears." Hyacinths are very abundant in Greece, and are used in profusion at weddings; as also at funerals, the bier is always strewn with them. This custom is observed likewise in Italy. Bryant has referred to it in his poem of a child's funeral at Sorrento; and he calls the flowers "*sad* hyacinths" probably, in recollection of the old myth. Near Aleppo and Bagdad very fine hyacinths are found growing wild. The Dutch have paid great attention to their culture, almost from time immemorial. In 1720 they had under cultivation at Harlem over two thousand varieties. Hyacinths are exceedingly fragrant, as well as very beautiful both in color and form. Their curling petals have furnished a simile often met with in literature—"hyacinthine locks"—which refers not to the purplish black color of some hair, as has been erroneously stated, but to a tendency to turn up, or curl at the end, which is more noticeable in the petals of the wild hyacinth than in those of the cultivated flower.

The hyacinth is raised from its bulbs, which increase themselves more or less every year. When cultivated in the house, the bulbs are generally grown in water, but it is not so good a way as to plant them in soil. Late in October fill small pots, one for each bulb, if you choose, or, a larger one to accommodate a number. First place a layer of broken bricks, then one of small pieces of charcoal; then loam, river-sand (washed), and decayed leaves, equal parts, each; and a little charcoal dust. Let the soil rest lightly in the pot, and in the centre press the bulb till it is about half covered. Tighten the soil a little, by pressing it lightly around the bulb. Set the pot in a dark place, where it will be moderately warm. If the situation be damp, it will need very little water. When the bulb is rooted bring it to the light,—set it on a mantel-piece or in a window. The shoot will look white at first, but it will soon become green, and grow rapidly. Now water it very freely every day, adding a few drops of ammonia to the water once in ten days. When off-sets appear, press them out with the finger, or a smooth, thin stick.

If you wish to grow hyacinths in water,

choose firm, heavy, medium-sized bulbs, and keep them in damp moss a few weeks. Get the darkest colored glasses; fill them with rain water to which a little common salt has been put; not entirely full—the bulb placed in the neck of the glass must not touch the water. Keep them in a warm, dark place till the glass is half full of roots. Change the water (it must be always warm) once in a fortnight; and keep it always of the same height by filling in a little as it evaporates. When the water is changed always use rain water, salted slightly, and add a few drops of ammonia. If the roots get slimy and green, wash them carefully in warm water. The bulbs after blooming in water are generally so exhausted as to be valueless. But those kept in soil may be transferred to the garden in the spring, and may live several years; or they may be dried, and, wrapped in paper, kept in a cool, dry place until the autumn, and then started again for winter flowers. A very pretty way of growing the hyacinth is to place it with the bulbs of snow-drops and crocuses in a deep dish. Cover the bottom of the dish with pounded charcoal—not very fine—an inch deep. On this have a layer of damp silver sand. Arrange the bulbs at equal distances upon the sand, and keep the dish in a dark room for three weeks. Then, pour a little water just inside the edge, all around the dish, and if the bulbs are started up from the sand by the new roots, pour dry sand over them till they are covered. When the leaves appear, bring the dish to the light; and as soon as the flower-spikes peep up, take them to the window, or flower-stand; water them now, daily, with warm rain water slightly salted.

Hydrangea.—The word signifies water-vessel, and is of Greek derivation. It is a marsh plant, and requires a great deal of water,—ten or twelve gallons, daily, in the summer, is often imbibed by a single plant, if of large size. It is a native of the Carolinas and Florida; also of Japan and China. It thrives best in the shade; and, like the agapanthus, is usually kept as an ornament for the verandah in summer. It is propagated by layers, in a soil of peat and loam. The natural color of the flower is pink; but if blue flowers are wanted, powdered alum must be mixed with the soil, one ounce to a quart of soil. Iron filings have the same effect.

The Ivy, whose botanical name is Hedera—the Celtic for "a cord"—is what is called a rooting climber, because its stems climb up and wind themselves around anything that presents a rough surface for their roots to take hold of. *H. helix*, commonly called English ivy, is an evergreen plant, growing plentifully in the woods of Great Britain; and hiding with its foliage the gnarled old oaks and sycamores; or hanging its long garlands of verdure in picturesque beauty about the walls of dilapidated churches, and around the crumbling ruins of ancient castles. But with us it needs protection from the cold of winter; and, if reared out of doors, must then be covered with mats. It is, however, one of the best plants for parlor culture, and ought to be in every house. It needs a light, rich soil of peat and loam, drained with pot-sherds; and regular and plentiful watering must be given it. It is very pretty as a hanging plant in the upper part of a window, or seated upon a shelf or bracket and trained about the walls. Cuttings root easily in water, and long stems of ivy, cut from plants cultivated out of doors, may be kept in vases of water all winter upon the mantel-piece, and then set in the ground in the spring to make large new plants. There is another species, called the German ivy, having more succulent leaves, which grows more rapidly. This goes also by the name of Irish ivy; but many do not consider it as properly belonging to the genus. It should have the same treatment as *H. helix*. There is yet another plant, which is very pretty for hanging pots,—the Roman, or Coliseum ivy,—called sometimes, mother-of-thousands. It throws out slender, purplish stems having small green leaves with purple lining; and it bears tiny, lilac-colored flowers, shaped like the blossom of the snap-dragon. This grows in great profusion in the south of Europe, in the cracks and crevices of old buildings,—where there seems scarcely soil enough to give it foot-hold; the roof of the grand cathedral at Milan is in some portions thickly overgrown with it. This does well in sandy loam, but will not bear great watering. Among the ancients the ivy was held in high esteem. They dedicated it to Bacchus, and he is represented crowned with it to prevent intoxication.

Lantana.—This is the ancient name of the Viburnum, which the plant resembles in foli-

age. It is a native of the West Indies—brought thence in 1692. *L. aculeata* is the most common species. The blossom is similar to that of the verbena; and changes in color, from yellow to orange and red. It requires the same soil and treatment as the calceolaria.

Lemon.—The lemon belongs to the genus *Citrus*, which includes oranges, lemons, limes, shaddocks, citrons, &c. It is an ancient genus, the species of which are characterized by their handsome evergreen leaves, odoriferous flowers, and fragrant and delicious fruit. The golden apples of the Hesperides, and the forbidden fruit of the garden of Eden, are supposed to refer to this family; though we have no authentic record of any species of *Citrus* having been known, and certainly none were cultivated, by the Romans. The plants are natives of Asia. The citron, which differs little from the lemon, was carried from Persia to Europe—cultivated in Italy, by Palladius, in the second century; and, about a thousand years later, the orange was also introduced to Italy, from China and India. Orange-trees were growing in England in 1595; "carried thither," says Gibbon, "by a knight of the noble family of Carew." It has been raised by Sir Francis Carew from seeds brought by Sir Walter Raleigh; but, as such trees could not readily have borne fruit, it is more likely that Gibbon's account is correct. They were kept in open ground, having a moveable cover for winter. They were killed in the great frost of 1739–40.

At the beginning of the eighteenth century, when there were few exotics, orange trees became fashionable for conservatories. And, although other plants, of almost endless variety, have been in competition with them since, and some of them, in the mere matter of fashion, have occasionally gained the precedence, no vegetable production has yet been found capable of attaining such high perfection in foliage, flower and fruit combined, as the orange. Lemon or orange trees may be raised from seeds, and in six or eight—possibly in three or four—years may bloom. But they are more sure to bloom, and will bloom sooner, if budded, or grafted. A seedling lemon or citron makes as good a stock for budding with orange as the orange stalk itself. Seeds should be planted n pots, drained with cinders. Soil, one-third of sand; and the remainder light loam that has not been cultivated, peat, leaf-mould, and old manure, in equal parts. Mix all well together that the compost may be uniform. As soon as the first shoot appears, water the soil, and give the pot air, heat, and light: but keep it from the sun, if it shines powerfully. After the first leaves have opened, water with liquid manure once a month; and wash the leaves and stems frequently. The foliage will be handsomer if the pot is kept in the shade.

Lemons.—When seedlings are two years old, they should be budded from healthful and fruitful trees. They must then be kept in a cool—not cold—airy place, and be watered charily. When the bud shows growth, give more warmth, and more water. Young orange and lemon trees are very desirable for the flower-stand, even if they do not bloom, because their beautiful evergreen foliage affords a fine contrast to other plants. But if the blossoms and fruit are wanted, the best way is to buy a tree ready to bloom. These are generally imported. The Italians have for many years supplied both North and South America, as well as all Europe, with orange trees, of which they have extensive nurseries. The prettiest for house culture are the dwarf. The dwarf Mandarin bears fruit of exquisite flavor. The dwarf Otaheite is a more common kind; this bears a great abundance of fruit, but it is not so nice, neither are the flowers so fine, as those of the Mandarin. The shaddock bears very large, beautiful flowers. The blossoms of the lemon are smaller than those of the orange, and the under side of their petals is tinted with purple. The orange blooms in March; and the fruit shows its form in April, but does not begin to turn yellow until the following spring. It requires over a year to ripen oranges, and they are better for remaining longer on the tree; they can remain three years on the tree before being gathered—the orange never drops naturally. The lemon ripens irregularly, and falls off when ripe.

Once in six years, orange trees should be pruned, the shoots shortened to within an inch or two of the old wood. It will not blossom for two years after this, but it will throw out handsome, vigorous shoots, which at the end of that time will be covered with an abundance of flowers. Unless the tree appears sickly it will not need re-potting except at the time of prun-

ing. Then take it from the pot, trim off the small fibres and mouldy roots, and soak the ball of roots in warm water for ten or fifteen minutes—to detach the old soil. Place it in a pot, with drainage and soil as for seedlings, adding thereto a little charcoal dust. Keep it in the shade a month, and water it sparingly. Give it room then with other flowers, and water it more, as it grows. Wash it frequently, for it is apt to be troubled with insects. It needs light, but not much sun till the fruit is set. Everybody knows that orange blossoms are the most appropriate flowers for bridal decorations.

Lily of the Valley.—*Convallaria*, the botanical name of this beautiful flower, is of Latin derivation, and refers to the places where it grows. It cannot be the plant of the same name of which Solomon speaks, because it is a native of cold or moderately warm countries, and would never have bloomed in the fields of Palestine. Old English writers call it May lily. In the western part of Norway it grows in greater abundance than any other wild flower. A recent traveller says that it stood everywhere, scenting the air, in such profusion one could scarcely step without bruising its tender stalks and blossoms. Its fragrance when fresh is remarkable only for sweetness; but when the flowers are dried they are powerfully narcotic. A wine is made of the flowers in Germany. A beautiful and durable green color may be prepared from the leaves, with lime. An extract is made from the roots and flowers which has all the properties of aloes. The plant is very common in Great Britain, growing in the woods, from whence the London markets are supplied. It was brought to this country among our earliest exotics, and is found in almost every garden, filling the air in its vicinity with fragrance during the months of May and June. But it can be made to bloom in winter and is one of the sweetest as well as prettiest parlor plants we can have. The bulbs should be taken from the garden in November. Choose those having the thickest and bluntest buds—the sharp-pointed buds produce only leaves. Fill a pot—a box four inches wide and deep is better—with light, rich soil. In this set the bulbs slightly, just so as to cover all but the point of the bud. Lay moss over them; and then cover all with another box, so that they may be in complete darkness, —for this is essential to success. Keep the box in a warm place, but dark, until the flowers begin to show. Then remove the covering box, and gradually take the box of plants to the light. The leaves will look white, but they will become green very rapidly after the admission of sunlight and air. Occasionally give them warm water—they must never be dry. They will be in bloom in a month from the time of planting the bulbs. Another way of treating them is to wrap each bulb in moss, and then lay them all closely together, the points upward, in a box; and sprinkle soil in among and upon them, just leaving the tops bare, and covering from the light as before, until they are in bloom. Then take them out carefully, and arrange them, the moss still about them, in baskets or glass dishes or vases. The moss will need moistening occasionally; but they will remain in bloom a good while with very little moisture.

Lobelia.—This genus takes its name from an old French botanist. Most of the species are natives of this country. Some are found at the Cape of Good Hope, and a few in the south of Europe. *L. Cardinalis*, (called by Cutler in his account of the indigenous plants of North America, published in 1785, American Pride) is one of the most beautiful of the family. This species attracted the attention of English florists early in the seventeenth century, and is now cultivated among their choice plants. Transplant in the fall to rich loam. Keep it shaded a month. Cut it nearly down to the root, at the time of transplanting. Water it with weak liquid manure, and as soon as it shoots out well take it to the flower-stand; its gorgeous scarlet flower will be a valuable addition to any collection. *L. Gracilis*, a trailing species, bears a pretty blue flower, which makes an elegant appearance in a hanging-pot.

Mahernia; more properly, Hermannia.—Named in honor of Hermann, a Dutch botanist. It is a delicate little shrub, and needs the support of a frame. Nothing can be prettier than a thriving specimen of *M. Odorata* in full bloom; the frame being covered with its fine, neat foliage, thickly hung with the small bell-like flowers that dispense a most delicious fragrance. It is easily raised from cuttings started in damp sand under a glass; and then transplanted to pots, drained with crocks, hav-

ing a soil of peat, sand and loam. Keep it moist but not too wet. Give liquid manure occasionally.

Mignonette.—This is a French name, meaning little darling; but the French themselves call the plant by its botanical name, *Reseda*. It is a native of Egypt and Barbary. In France, as well as in England, it is cultivated in boxes for the window seats and balconies; but with us it is usually confined to the garden. It is, however, well worthy of house-culture, and may be added to winter flowers by setting apart a few plants from the garden, cutting off their flower buds when they appear, and transplanting them in the autumn to pots filled with sandy loam; still it is better to plant the seed in a pot especially for winter. This should be done in September,—just scatter the seed on the top of the loam, and then sift more of the soil upon it,—and keep it in a shady place till it is an inch high; then give it sun and more water. In October bring it to the kitchen, where it will be warm night and day. Let it have the full sunshine, and when flower buds appear carry it to the flower-stand.

One plant may be made to grow into a tall shrub, by taking off the buds as fast as they appear through the first season, and then trimming away the branches so as to form it like a tree. It should be taken in with house-plants, and kept warm and well-watered, through the winter. The second summer it should receive the same treatment again, but by the third summer it will have acquired woody back, and in all respects be a complete shrub. Then it may be allowed to bloom, and for many years it will bear, every summer, an abundance of very fragrant flowers. No doubt by skilful management the plant might be made to do the same for winter.

Mimulus.—The name is derived from the Greek, and signifies an ape. The flower-seeds resemble a monkey's face, hence the plant is sometimes called monkey-flower. It is a showy plant, of easy culture, brought from South America—some species from Mexico. One, *M. luteus*, is a culinary plant in Peru. It is raised from cuttings, in a soil of peat and loam, which should be watered profusely—enough to keep the saucer full. But the pot should be deeply drained with pebbles, and the water should be emptied from the saucer every day.

Money Plant.—This plant belongs to the Loose-strife family; and they were so named by the ancients because they erroneously supposed that their flowers quieted restive oxen by being placed upon the yoke. This species is of trailing habit and looks pretty at a window. Fill a small pot—a conch-shell is more tasteful—with rich garden soil and set the slips securely. Keep it in the shade till they begin to grow, giving it plenty of water. Then hang it in the sunshine and it will soon be studded with bright yellow blossoms; but it will not bloom away from the sun, and it will die unless kept constantly damp. It is a native of England—growing abundantly in the meadows.

The Myrtle derives its name from a Greek word meaning perfume. It is a native of Africa and Asia, as also of southern Europe. "The myrtle groves of the south," have furnished the poets with many a theme. The ancients paid great attention to odorous shrubs, hence the myrtle became an object of high regard among them, and in the rich climate of Greece, which strengthens the perfume of plants it grew to great perfection. Virgil tell us that myrtle-wood was used for making implements of war on account of its hardness; and the Portuguese now consider it the hardest wood that grows. In the estimation of the Arabs it stands very high also. They say that Adam fell down from Paradise with three things: the myrtle—which is the chief of sweet-scented things in the world; an ear of wheat—which is the chief of all kinds of food in the world; and pressed dates—which are the chief of the fruits of the world.

The ancient Romans dedicated the myrtle to Venus, the goddess of beauty; they steeped its leaves in their wine to improve its flavor, and to add to its invigorating properties; they used the berries in medicine; and they wove garlands of it for the head of their chief magistrates, and for the brows of the dead. This last practice was adopted by the early Christians; and though it was finally prohibited, on account of its heathen origin, the myrtle, as a religious decoration has never been entirely set aside. In the Madeira Islands, where myrtle trees are very abundant, the churches are adorned at festivals with its leaves and branches; and they are also borne in processions in Catholic countries. In Australia the

myrtle grows to a great size; having an enormous trunk, and standing one hundred feet high before it expands its canopy of foliage.

M. communis—the common myrtle—is the species usually cultivated in this country. It is the myrtle of the Scriptures, and has several varieties. The broad-leaved is the Jew's myrtle. They still regard it with veneration, and are anxious to obtain it for the celebration of their Feast of Tabernacles. In Europe it is frequently cultivated expressly for that purpose; the most devoted obeying literally the command of the prophet Nehemiah to "Fetch olive, and pine and myrtle." The leaves of this variety grow in threes. There is also another broad-leaved variety; also a narrow-leaved, the box-leaved, and the Chinese. This last bears purple flowers; the others white. The myrtle is propagated by cuttings stuck in sand under a glass. Cut the slip at a joint; and cover it with sand half-way to the next joint. When it is rooted set in a three-inch pot drained with crocks. Soil—one-half garden loam; and the remainder sand and leaf mould in equal proportions. It needs air and regular watering to flourish well, also frequent washing. In the winter give it a sunny situation; but in summer keep it in the shade and water it sparingly. It need not be re-potted till the second year. Do not change the pot too often as it stops its growth—only be sure that it is not pot-bound. If not too frequently disturbed it soon becomes a large plant, one of the neatest and handsomest for the parlor.

For the New England Farmer.

CULTURE OF PLANTS.

Mr. Editor:—I merely wish to say how interested I am in those articles entitled "How to make Home Happy."

Not having, like the woman who does *not* live in her shoe, a cluster of olive branches to superintend and direct in the way they should go, I am more especially devoted to my house plants, of which I have a choice collection.

I live in a farm house, and my kitchen, like many old farm house kitchens, is dark and homely, but my two south windows filled with plants present a cheerful, pleasant appearance with their luxuriant green leaves, and bright beautiful flowers, even in the middle of winter.

I have often wished my husband would take a more practical view of the valuable hints to be found in the Farmer, on the different items of farming; but now I have an opportunity to try some of those rules myself. I have a number of the varieties of plants mentioned by Miss Hale, and I intend to apply the rules therein laid down to their cultivation. If they do not thrive as well under that system, you may be sure I shall find fault, for my flowers seem like pet companions.

Allow me to add that I hope we shall have a few hints on dahlia raising. They are great favorites of mine, and I would like to know if there is a way to obtain a variety of those beautiful flowers except from the seed, which is a slow way of getting them.

A Subscriber.

Concord, Vt., Feb. 22, 1867.

Remarks.—Thank you for the compliments expressed and implied. We think you will not regret following the directions given, but as you already appear to have good success with your plants, and seem to be a little doubtful whether the new plan is as good as your own, adopt the new by degrees. Try it, for instance, on the additions you make, from time to time, to your stock. You will find, before the chapters on Plant Culture are completed, many varieties named which will be new to you, probably, and which would doubtless thrive well with you, and amply repay you for your trouble.

Such a window as yours should have some hyacinths in it, next winter. There can hardly be anything easier to grow than they have proved with us, and the common varieties are not expensive. For garden culture, to be planted in the fall, good bulbs will cost from $1.50 to $3.00 per dozen. For pot or glass culture, the price is rather higher. Single bulbs will cost you from 25 cts., to $3.00 each, according to rarity and beauty. Named varieties can be had for $4.00 a dozen, or for $1.75 a dozen without names. The blossom is fine and very fragrant. We have just put aside one lot which have done blossoming, and have another lot coming forward to take their place.

The dahlia was extremely popular once, but of late years other flowers have taken its place, and it is not anything like so common as ten, or even five years ago. You can best procure a variety at the florists, and we recom-

mend you to Washburn & Co., J. Breck, or Hovey & Co., of this city, who will charge you from $1.50 to $6.00 a dozen for strong, thrifty plants that will give you an abundance of blossoms, if properly cared for. The expense of getting the plants, properly packed, would not be very great if you are near the railroad, or have an express running to your town.

With regard to the culture of the dahlia, Rand says it thrives best in a rich, deep, pliable soil, which should be well manured with thoroughly decomposed manure, and well drained. Plants should be set the latter part of May, five feet apart, and tied to tall stakes. A correspondent of the *Germantown Telegraph* says:—

I plant the bulbs in hot beds, just as I would sweet potatoes; when the plants get up four or five inches, I cut them off down close to the tuber or bulb; these sprouts I cut up into little pieces, making the lower cut just below an eye. These cuttings I put out in sand, and they soon strike roots and grow. The tuber will send up other sprouts, which, when of sufficient size, are cut off and treated in the same manner. A large number of plants are thus made from a single tuber or root. By this method the finest flowers can be produced. If you plant the whole bulb, with one eye on it, the plant will grow very rapidly and strong, but it will all go to stalk and leaves, and the flowers will be indifferent. Most people plant out dahlias too early; the first of June is plenty early enough. The best flowers are those which are produced late in the season. The treatment of the plants, after they start, requires no special skill.

If you have not already tried the gladiolus, as a garden flower, you cannot do better than to add it to your collection. It is easy of culture, easily kept through the winter, and the common kinds increase quite rapidly. It is a thrifty, clean plant, and its long spikes of flowers are very handsome. The flowers will keep several days in water, and a spike thus treated, when just commencing to open, will continue blossoming till all the buds have opened. As with the hyacinth, you can get the bulbs quite cheap, or you can pay as high as $4.00 for a single one. Ordinary kinds will cost you from 10 cts. to 30 cts. each; very good ones 25 cts. to 75 cts. each; and mixed varieties, in which you will stand a good chance of very fine flowers, $2.00 to $2.50 a dozen, prepaid by mail.

But our remarks are encroaching upon our space. A quarter of a dollar to Washburn or Hovey, will secure you by return of mail a pamphlet giving full lists and prices of plants and seeds, with directions for culture. We hope you may have "good luck" with your plants, and that our response to your inquiry may prove satisfactory. Ed.

THE
NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

NEW SERIES. Boston, June, 1867. VOL. I.---NO. 6.

R. P. EATON & CO., PUBLISHERS, OFFICE, 34 MERCHANTS' ROW. MONTHLY. SIMON BROWN, S. FLETCHER, } EDITORS.

BEAUTIFUL JUNE.

"Seize, happy mortal, seize the good—
God's hand supplies thy sleep and food,
And makes thee truly blest;
With plenteous meals enjoy the day,
In slumber pass the night away,
And leave to fate the rest."

THE month of JUNE, in this climate, is, really, what the poets represent May to be, the most lovely month in the year. Summer is commenced, and warm weather thoroughly established; yet the heats rarely rise to excess, or interrupt the enjoyment of those pleasures which the scenes of nature at this time afford. The trees are in their fullest dress, and a profusion of the gayest flowers is everywhere scattered around, just before they are cut down by the scythe or scattered by the heat.

All nature is glowing with fervid life. The grain is green in the fields. The blades of corn are shooting up green and succulent. The plants in the garden are expanding their leaves and filling the soil with their rootlets, and each is struggling to secure possession of as much space as possible, for its further development.

The sun shines in our latitude more hours, this month, than in any other month of the year. His rays are sending their all-penetrating force into the most hidden recesses of animated nature, and under his stimulating influence, she is driving, in full tide, the life-blood through every artery and sap-vessel of every living thing.

And now that JUNE is so beautiful, its breath so fragrant with the sweet odors of the flowers, and all the rich influences of the heavens and the energies of nature herself are *working for us*, and cheering our labors, let us not be deficient in efforts for ourselves. First, let us

Work Systematically.

Although the farmer cannot be governed by exact rules as the mechanic can, he may still introduce system into his labors with convenience and profit. The work for June, and the other summer months, should be reduced to something like a plan, so that all confusion may be avoided, and everything be ready to accomplish the work in the easiest and best way, as each day and week makes its new demands. In this way no part of the crop is likely to be neglected.

NO WEEDS.—There is an old story of the heathen gods, of a famous robber named Sisyphus, who was killed by Theseus, and his punishment in another world was to roll a great and unwieldy stone to the top of a high hill, and as often as the stone almost touched the top of the mountain, down it would go again, in spite of all his efforts to prevent it. So he had to trot back and roll it up again!

The stone of Sisyphus pretty well illustrates the folly of allowing weeds to perfect themselves in our gardens and fields. The farmer

destroys an immensity of them in one year, but they are so numerous that sufficient remain to bring up legions the next,—so he goes on, pulling up a world of them, like rolling up the stone, and leaving a plentiful crop to re-seed the land for generations to come!

There is only one sensible rule about the matter, and that is, *utter extermination*. Do not leave one weed, to attract even the beautiful snow-bunting in the winter, who comes to feed upon its seeds.

THE CULTIVATOR AND HOE.—These must be kept in motion, and while using them, do not think that it is an operation merely to kill weeds or prevent them from starting,—but rather that it is an operation full of scientific principles, all of which tend to mellow the soil, to admit warmth and moisture into it, and fit it to receive important influences from the air. When you indulge in this train of thought, your work will rise in dignity and importance, the hours and days will appear shorter, and at night you will return from the fields a more cheerful and happy laborer from God's vineyard.

CONCLUSION.—We must not detain you in this beautiful and busy season, to refer to many more important things. Only one other point will bring us to a conclusion, and that

RELATES TO HAYING.—On many pieces of our excellent land the grass comes into blossom as early as the 20th or 25th of June, and many years' experience confirms us in the opinion that it is better to commence haying with such grass at that period, and then keep on in securing the general crop. Clover, especially, ought to be cut before any of it is lodged. From June 20 to July 20, we usually have the finest hay weather that occurs during the season. It is thirty days in which we are enabled to secure hay a third faster, with the same help, than we can in any other thirty days. Try it, brother farmers, and inform us of the result.

P. S. Do not fail to devote a day or two to visiting during the month of June, with some of the members of the family. If you have no family get one as fast as possible, and let the wedding tour come in JUNE.

—An army of rats made a raid on the hog-pen of a farmer at Summer Hill, N. Y., a few weeks ago, and killed and nearly devoured a hog weighing two hundred pounds.

For the New England Farmer.

HOW PLANTS GROW.

Put a seed in the ground, and observe what takes place. Soon it begins to swell, and in a few days bursts its envelope. The plumule or stem is now visible, folded along the opening edge of the seed, and tending to push its extremity into an erect position. The radicle becomes visible, and soon divides itself into several parts, with hairy projections on their surface. Within the seed a change has taken place, not apparent to the eye. A portion of the starch in which the germ is enveloped, has been converted into a soft sweetish substance, which is being absorbed by the stem and radicle, and constitutes their food for a time, just as the yolk and albumen within the shell are absorbed and digested by the chick, until the organs by which it can obtain nourishment from without, are perfected. The little hairy projections on the surface of the radicle are daily becoming more numerous, and each is terminated by an open mouth. These are the organs by which the young plant is to communicate with the soil. The rising stem now pushes through the soil, into the air, and the light converts its yellowish white color into a delicate green. Plants that grow in the dark are never green. When the buds are unfolding and the leaves are growing rapidly in the spring, if there are two or three cloudy or rainy days, the portions of the leaves that have grown during these days, will be of a lighter green than the portions that had previously grown, and when the sun breaks forth, a few hours will change their hue to a dark and brilliant green; thus showing that the green color depends upon the chemical influence of the sun's rays upon the sap. A careful examination of the green surface of the stem will disclose minute orifices in great number, or pores, which are so many organs by which the stem communicates with the air, as the root does with the soil. The starch within the seed has now been wholly changed into sweet pulp, and digested by the organs of the growing plant. But it is no longer needed, for the organs by which the plant is to communicate with the external world are complete. It can take care of itself. It is now no longer dependent upon the nursing care of the mother plant, but has commenced a separate and independent life. It cannot indeed run about like the chick, and pick up its food, but it can drink it up from the soil in which it stands, and from the air which bathes its surfaces. And as it needs more food from day to day, to sustain its increasing growth, it obtains it by pushing its roots further and further into the soil, with new mouths constantly opening to drink it in; and by lifting itself higher and higher into the atmosphere, and forming new buds, and unfolding new leaves, or by increasing those already formed,—every new surface presenting new pores or mouths to drink in

nourishment. In a plant rapidly growing, hundreds of new mouths are thus formed every day, to increase its power of obtaining food; and thus its very growth increases its power of growing. As the stem advances in height, we find protuberances, either in the form of rings or circles, surrounding it, or segments of circles partially surrounding it. From these protuberances, which are so many reservoirs of sap, buds are thrown out, which soon lengthen into branches, on the surface of which new circles or segments are formed, giving rise to new buds and new branches. And here we may notice a curious fact, viz: that the buds and branches are not formed in direct line one above another; but each new bud is pushed out one-third or one-fifth of the circumference from the line of the last bud below it, so that each bud may have its bundle of sap vessels running directly to it, without interfering with the vessels which nourish the bud below.

This expansion of plants, below and above the soil, and the constant opening of new mouths or organs of communication with the external world, are the equivalent given to plants for the power of locomotion given to animals.

The life and expansion of plants is limited by their nature and the circumstances in which they are placed. Some complete their growth and provide for the continuation of their species in one year, while others continue to grow for two years, or for many years, perhaps for centuries. So with animal life. Some complete their growth and work in a few days or months, while others continue for several years, or scores of years, according to the laws of their nature. All living beings, whether vegetable or animal, are subject to certain laws inherent in the constitution given to them by the Creator, to which they must conform to attain the perfection of which they are capable. Circumstances may and do prevent this entire conformity, hence the imperfection which we constantly witness. J. R.

Concord, Mass., 1867.

BEET SUGAR.

To show the progress of the Beet Sugar manufacture in France, we copy a few paragraphs from Mr. Grant's little volume on "Beet Root Sugar and Cultivation of the Beet," which Messrs. Lee & Shepard have just published.

In 1810, M. Deyeux, a member of a committee previously appointed by Napoleon I. to investigate the subject of the manufacture of beet sugar, made his report, and presented two loaves of sugar equal in every respect to the best sugar from the cane, but neither the percentage of sugar obtained nor the cost of production was given. Reports not well verified were published that in Germany from four to six per cent. of sugar had been obtained.

By the experiments of M. Barruel, from fifty to sixty per cent. only of juice was obtained from the beet; whereas the production at the present time is from eighty to eighty-five per cent. The yield of sugar was about one and one-half per cent., while at the present time in France it is about seven; in Germany, eight to nine; and in Russia, nine to ten per cent. The cost was nearly thirty cents per pound, while at the present time it is about four cents.

M. Derosne, a Frenchman, obtained in 1811, about two per cent. of sugar from the beet. Other experiments yielded two and one-half per cent. A factory working 500 tons of beets in a season was considered quite extensive. There are establishments now in operation that work 60,000 tons. A rasp then worked up about three tons per diem. Now, from 150 to 300 tons a day are consumed by one rasp.

In 1812 the cost of manufacturing sugar was about nine cents per pound. Chemical schools and imperial factories were established, and government ordered the cultivation of 100,000 acres of beets.

In December, 1814, favorable tariff duties infused new life into the industry; manufacturers introduced great improvements in their establishments, to such an extent that they obtained seventy per cent. of juice from the beet, in lieu of fifty and sixty. The yield of sugar was from three to four per cent., and of molasses about five per cent. M. Crespel Delisse claimed that he obtained five per cent. sugar and 4.8 molasses. The cost of manufacturing was about seven cents per pound.

From 1822 to 1830 the number of manufactories largely increased. The yield of sugar was about five per cent., and the cost of production about five and one-half cents per pound.

In 1825 France produced 5000 tons of sugar in over one hundred establishments. From 1830 to 1836 great progress was made. The sugar produced was of improved quality, and amounted to about five per cent. of the weight of beets worked. The introduction of steam power increased the means of production ten-fold. In 1836 four hundred and thirty-six factories were in operation.

Since 1840 the production of beet sugar in France has doubled every ten years.

There were sixty manufactories of beet sugar in Austria in 1840; in 1865 the number had increased to one hundred and forty.

The States of the Zollverein have nearly quadrupled their production in the past fifteen years, 52,586 tons having been produced in 1850, against 180,000 tons in 1865–6.

The intimate relation between this branch of industry and agriculture developed itself, and there were no longer unimproved lands in the vicinity of a sugar manufactory. In the department of the North, where the industry was most firmly established, the number of acres under cultivation in grain increased enormous-

ly, the beet pulp furnishing farmers with the means of feeding an increased number of cattle, thus providing the means of fertilizing an increased amount of land.

L'Echo Agricole says, that "all farmers who obtain first prizes at the agricultural exhibitions are either sugar manufacturers, distillers, or cultivators of the beet. Those who have adopted this branch of agriculture, either as proprietors or tenants, have really obtained astonishing results.

M. Vallerand, who took the first prize in the Department of Aisne, bought, in 1853, a farm of eight hundred and thirty-two acres, the sales of produce from which amounted to $8,000. In 1859 it produced $41,200. M. Dargent, who took the first prize in the Department of Seine Inferieure, cultivated only fifty acres. He so increased the production of this farm that he obtained 154,000 pounds, or 68 tons and 168 pounds, of beets from a single acre. His yield of wheat was 43½ bushels, and of oats 58½ bushels to an acre.

The culture of the beet involved the necessity of deep ploughing, heavy manuring, and thorough weeding. The pulp from the juice is extracted in the manufacture is an excellent food for cattle, the number of which has been increased, in the districts devoted to that industry, from eight to ten-fold since the introduction of sugar-making. The cattle furnish an immense amount of manure, which, applied to the deeply-ploughed and well-weeded beet lands enhances their productiveness for the cereal crops. In 1853, when the Emperor and Empress came to Valenciennes, a triumphal arch was erected, with the following inscription:—

Sugar Manufacture.

Napoleon I. who created it.	*Napoleon III. who protected it.*
Before the manufacture of beet sugar, the arrondissement of Valenciennes produced 695,750 bushels of wheat, and fattened 700 oxen.	Since the manufacture of beet sugar was introduced, the arrondissement of Valenciennes produced 1,157,750 bushels of wheat, and fattens 11,500 oxen.

Among the conclusions to which Mr. Grant has arrived from his careful investigation of the whole subject, are the following:—

That the skill, which is the result of the experience of more than a century, and which has made France independent of foreign countries for her supply of sugar, is available for us to-day.

That the manufacture of beet sugar can be successfully transplanted from France to the United States.

That sugar can be produced in this country from the beet nearly if not quite as cheaply as it can be from the cane in Cuba, or any other country.

And that at present prices beet sugar can be manufactured in this country at a profit of from eighty to one hundred per cent.

A ROUGH SWAMP RECLAIMED.

A correspondent furnishes the following particulars of the reelamation of about two and a half acres of land, situated in North Woburn, Mass., near the soap factory of Messrs. Eaton & Co. At first Mr. Eaton tried a small piece, by applying a dressing of sand and manure to the surface, but was not satisfied with the process, as it settled down quite too solid, and he was obliged to pick it all over. Most of the swamp was thickly covered with bushes, the mud varying from seven to fifteen feet deep, in which were several open spring holes. Six years ago, the swamp was drained, and the top sod was entirely taken off, the spring holes filled up and a layer of gravel was spread over the surface. To this was added a compost of "sugar" gravel and horse manure, and the whole piece seeded down. A dressing of similar compost has been applied every fall. Mr. Eaton estimated the first year's crop at seven tons; two years ago it was eleven tons; and last year he kept six horses through the winter which had no other hay than that harvested in two crops from this meadow. The whole cost of reclaiming has been about eight hundred dollars.

PREPARING RENNET.—At a late meeting of the Little Falls, N. Y., Farmers' Club, Mr. William Davis stated his process:—He kills his calves at four days old; lets the calf suck at night; kills the next morning, and removes the rennet: empties by turning it inside out. Wipes with a soft cloth all filth that is attached, never washes; salts and packs away for a few days, until the rennet is saturated thoroughly with salt; hangs up on crotched sticks in a room where the temperature is about 60 degrees. When sufficiently dry, packs away securely from flies, dust, &c. Does not use until the next year.

CURING MEAT.—In Buffalo they are applying the Alberger process of curing meat. After the animal is killed, the belly is split open and an incision made in the heart; then comes scalding and bristling; after this another incision made on the opposite side of the heart, and into the two, rubber tubes inserted, and brine well heated, (320°) forced in. In a few minutes the brine is distributed through the carcass, and the meat is cured, the remaining blood being displaced at the same time.

—A correspondent of the New York Farmers' Club, says that chickens, worms or squirrels, will not touch seed corn that has been smoked with hams in a smoke house.

FIG 1. *Branch of Staminate or Male Hop-Vine.*

FIG. 2. *Branch of a Pistillate or Female Hop-Vine.*

The above cuts are drawn on a reduced scale, but a single flower of the male vine is shown at the left-hand corner of the plate, of natural size.

CULTIVATION OF HOPS.

Choon soil for the hop of rottenest mould,
Well doonged and wrought as a garden plot should;
Not far from the water (but not overflowne;)
This lesson well noted, is meet to be knowne.

The sun in the South, or else Southlie and West,
Is joy to the hop as welcomed ghest;
But wind in the North, or else Northerly East,
To hop is as ill as fray in a feast.

Thus wrote Thomas Tusser, Esq., more than three hundred years ago, in his celebrated "Five Hundred Points of Good Husbandry." Notwithstanding the quaintness of his style, it will be seen that his lines are full of hints as to the soil, manure, location, exposure, &c., adapted to the growth of the hop.

For the WEEKLY FARMER, of February 16, we prepared an article on the Cultivation of Hops, which was published without any illustrations. In consequence of the frequent requests which have been made for such illustrations, and for further information upon the subject, we have obtained permission to copy from a cheap, but valuable work entitled Hop Culture, published by Orange Judd & Co., of New York, a series of cuts which illustrate the usual modes of cultivating the hop in this country, and of preparing it for market.

The New American Cyclopædia describes the hop as "a vine with a perennial root from which spring up numerous annual shoots, forming slender flexible stems, angular and rough to the touch. These climb spirally to the height of twenty or thirty feet. The leaves are opposite, on long winding petioles; the smaller ones heart-shaped, the larger three or five lobed. It is found wild both in America and Europe. The flowers of the male plant (Fig. 1,) have a calyx of five leaves and no corolla; those of the female plant (Fig. 2,) have for their calyx the scales of an ament, each two-flowered, styles two, seed one. They form a foliaceous cone or strobile, called also catkin, for the sake of which alone the plant is cultivated. The catkins consist of the scales, nuts, and lupuline grains or glands. The scales are bracts enclosing the nuts which are small and hard. They are covered at their base with an aromatic resinous substance of yellowish color known as lupuline. This constitutes about

one-sixth of the weight of the dried catkins, and contains the greater portion of their valuable qualities."

In this country, as we have previously remarked, hops may be grown, as a general rule, on any good corn land. But in the United States as well as in England, the bulk of the crop is grown in a few favorable localities. The production of the single county of Kent, in the southeastern part of England, probably represents one half of the whole amount raised in all the other counties. In Otsego County, N. Y., it was estimated that 4,000,000 lbs. were raised in 1863, which is more than the whole crop of the United States for 1820, and nearly one-half of the product of the State in 1860.

The hop-yard should not be located in a valley or near thick woods, but still it should be sheltered by hill or wood from prevailing winds, for the reason suggested in the last two lines quoted above from Mr. Tusser. On the friable calcareous soils of Kent, England, hop roots have been found to descend ten, fifteen and more feet in search of food and moisture. This fact illustrates the importance of deep and thorough preparation of the soil. The great expense of poles, bins, kilns, bags, labor, &c., necessary to prepare the crop for market, makes it poor policy to spare labor or manure in starting the yard.

After the ground is duly prepared for planting, the places for hills—seven feet by eight is a common distance—are usually marked by furrowing each way, much care being taken to run them straight. If greater exactness is desired, or if the yard is small, the hills may be marked off readily by the use of lines and as many stakes as hills. Whether the hills are formed by the intersection of two furrows or by spading where sticks are used, the following cut illustrates the position of the sets and the manner of covering them and placing the stake to mark the hill.

FIG. 3. *Manner of Planting.*

The directions for planting, which should be done as early in the spring as the season will permit, say, about the last of April or first of May, we copy, with the cut, (Fig. 3,) from Mr. Judd's Hop Culture.

Cultivation the First Year.

Provide a dibble, or a sharp piece of iron, to make the holes in the manner shown in the cut. The sets are inserted in these holes, *taking care that the eyes in the set point upward.* Four sets, at equal distances apart,—although but two are shown in the cut,—form the hill, their upper ends approximating as in the figure. A handful of bones broken fine and thrown into the hill, will prove of great value by producing a rich, high-flavored hop. To cover the sets, take hold of the upper ends and pack the earth carefully around and over them, as shown in Figure 3. The sets are sometimes planted like potatoes, and sometimes an iron crowbar is used, the sets being held by one hand and the earth filled in around them. On examination of hills planted in this manner, they are frequently found twisted together in the form of a rope, much to the injury of the hill. There is another mode, that is regarded by some as having advantages over the above methods, which is as follows: Take the prepared sets and bed them, or plant them in rows sufficiently wide to admit of the free use of the cultivator; a single set in a place from five to six inches apart. The bed should receive careful attention in the way of hoeing and weeding, A dressing of special manure is useful. The best that I have ever used consists of six or eight parts of charcoal dust, two of pulverized hen manure, and one of plaster. This is also a valuable manure to be used yearly, after the first hoeing. The sets should be taken up the next October, and planted with great care. One strong, healthy set will make a hill. Immediately after planting, the hill should be covered with two or three shovels of manure. A yard planted in this manner will come into bearing the next season, the same as if planted out, as in the manner first described. It is customary to plant corn, potatoes, beans, tobacco, or any other hoed crop, with hops the first year. The crop that shades the least is best.

MALE HOPS.—In the centre of every hundred hills, or at regular intervals, should be planted a male hill. The poles should be left in these hills, or other means adopted to mark them distinctly and permanently. When the shoots are taken from these, they should be tied in bundles and put by themselves, to prevent their becoming mixed with those of the bearing plants. The male plant is of the utmost importance; for without this, it is impossible to produce good hops.

Corn, potatoes, or any other hoed crop, can be raised the first year with the hops. The cultivation consists in keeping the weeds down and the ground mellow. One day's work in

season is better than two later. If good sets are used, and they are planted very early, it will pay to raise a crop the first year, and the plants will be the better for it. Set one stake to each hill, and let *all* the vines run upon it. The stake should be but eight feet long and set one foot in the ground; if longer than that, the vines will not get to the top in season to "*hop*" well. It is best to stake the plants, because then they are out of the way in cultivating the yard, and do not get torn off. We raise from two hundred to four hundred pounds to the acre the first year, at no cost, except picking and drying, besides the cultivation, which must be done even if none are raised. The stakes may be pieces of old hop-poles, or better, one and a quarter inch square sawed stuff, eight feet long, (there is one *foot*, board measure, in each stake.) It pays well to get gas tar, heat it in a pan made for the purpose, and dip the whole stake into it while it is hot. This makes a firm coat of paint on the stake, protects it from the weather, and at the same time is very offensive to insects, and plant-lice will not lay their eggs on it in the fall. In the autumn of the first year, a covering of two forkfuls of coarse manure should be given the hills, and if there is any chance of water standing on the surface, furrows must be plowed for surface drains, for it will kill the hills it covers.

We shall have something upon the second year's management on another page.

RAISING CALVES.

For the first ten days the young calf is allowed the milk of the cow exclusively. The milk of the newly calved cow, as every dairyman knows, is not fit during the first week for dairy purposes, and is the only suitable nourishment for the delicate digestive organs of its young. For a few days after this period, about two or three quarts of milk at a meal should still be given, gradually adding some other food in the shape of gruel, and at the same time diluting the milk with water, so as to obtain the requisite quantity of fluid. Some recommend whey, where it can be procured. The gruel is made with a mixture of linseed-meal or oil-cake, powdered fine, and meal of various grains, barley, oats, and a little wheat flour. The proportions recommended by Mr. Henry Ruck, in a paper read by him at one of the meetings of the Cirencester Farmers' Club, (England) are as follows:—Into a 6 gallon bucket pour 2 gallons of scalding water, stir into this 7 pounds of ground linseed cake; then add 2 gallons of hay tea, which should be fresh and sweet; next add 7 pounds of mixed meal; add sufficient cold water to fill the bucket, and well mix together. Two quarts of this gruel, diluted with two quarts of cold water, will be about the right quantity, and of the right temperature, for one calf at one meal. The food should be given at regular hours, and twice a day, morning and evening, will be found sufficient. The hay tea, which seems to be an excellent preparation, is made every morning by filling a small tub with good hay, and pouring on scalding water; this should be used in the evening, fresh scalding water added, covered down, and used the following morning. After the first fortnight, when the calf begins to chew the cud, the chief difficulty and danger are over. As the calf begins to eat, the quantity of gruel should be gradually diminished. Solid food should be placed before them, to train and encourage them to eat, which they will very soon learn to do. The best material for this purpose is good sweet hay, with a small supply of crushed corn and crushed oats. In addition to this, mangold wurzel willb e found serviceable, and is very much relished by the young animals.—*Canada Farmer.*

FEATURES OF A PERFECT ANIMAL.

A perfect breeding or feeding animal should have a fine expression of countenance—mild, serene and expressive. It thould be fine in the bone, with clean muzzle, and a tail like a rat's. It should be short on the legs, and not ewe-necked. It should have a small, well-put-on head, with a prominent eye; it should have a skin not too thick nor too thin, covered with fine, silky hair—to the touch like a lady's glove; it should be straight-backed; well ribbed up and well ribbed home; the hook bones should not be too wide apart. A wide-hooked animal, especially a cow after calving, always has a vacancy between the hook and the tail, and a want of the most valuable part of the carcase. A level line should run from the hook to the tail. The outline ought to be such that if a tape is stretched from the fore shoulder to the thigh, and from the shoulder along the back to the extremity there, the line should be close, with no vacancies; and the line should fall without a void from the hook to the tail. From the shoulder-blade to the head should be well filled up; as we say—good in the neck vein. Scarcely any one animal will possess all these marks—indeed, to look for the half of them in a good commercial animal would be vain. The marks are set down in good order, but just as they occurred to one who had gained his knowledge from the study of the living specimens, and not from books. Thick legs, thick tails, and deep necks, with thick skin and bristly hair, always point to sluggish feeders.—*Mr. McCombie, of Scotland.*

Silk.—J. W. C. Seavey & Co., Canton, Mass., manufacture sewing silks, machine and stick twist, employ 60 hands, and produce upwards of 300 pounds per week. The factory has been in operation for fifteen years, and within three years its producing capacity has been doubled.

ROOTS AND GRAIN CROPS.

UCH has been written on the subject of root crops. The question, whether roots are cheaper than corn in feeding horses and other domestic animals while at labor, has not, perhaps, been satisfactorily solved, nor are we aware that any experiments that can be confidently relied on, have been instituted with a view of deciding the point.

A writer in the "*Farmer and Gardener*," an English work of high authority, in speaking of "Horse Feed," says:—

To begin, we will premise, that each working horse will consume three gallons of corn per day, or one hundred and twenty-six bushels seven gallons a year; now if we take thirty bushels as the average yield of an acre in corn, which is a large one, it will take four acres, sixty perches of ground to raise corn enough to sustain a single horse; on the other hand let us suppose that an acre in carrots will yield three hundred bushels, (and this is a small average, for 700 bushels have often been produced on an acre,) and as it has been ascertained that *three pecks* of this root, daily, is sufficient to sustain a horse well at labor, as there are twelve hundred pecks in three hundred bushels, so will one acre sustain a horse one year and thirty-five days, making a saving of three acres and ninety perches of land, and nearly the equivalent of that amount of labor in tillage, as all will admit that if the carrots be *judiciously drilled*, the amount of labor to be performed on their culture, is very little greater than what is requisite to secure a good yield of corn—*one thinning* and *three hoeings* being all that is necessary to ensure a good crop. As to the manuring, we will observe, that they do not require more than ought to be given to corn, as less than twenty loads should not be devoted to either. The gathering and preservation is, to be sure, more tedious per acre, but when the labor to be bestowed on four acres and ninety perches in corn, is compared with that requisite for one acre of carrots, we think the amount will stand decidedly in favor of the latter.

We may here observe that seven hundred bushels per acre, is by no means to be regarded as an extra—much less as the maximum yield of this root. A gentleman in Norfolk County, Mass., informed us that he had raised carrots at the rate of 1,600 bushels to the acre, having about one-fourth of an acre accurately measured. The crop was on good land, highly manured and thoroughly tended. The yield of corn in the above estimate, which is averaged at *thirty* bushels, is less than it should be, unless, as we suspect, the writer being English, means *wheat*, for which "corn" is the popular designation in England. More than three times that amount of Indian corn is often produced, per acre, in New England.

Mr. S. BLAGGE, of Dorchester, Mass., many years ago, sent a communication upon the culture of carrots to the *Massachusetts Agricultural Repository*, in which he states that he spread three ox cart loads of old stable manure on one-eighth of an acre of land, of a rich, light loam, in which potatoes had been planted for two years preceding. Plowed it in the fall and twice in the spring, the last time about the first of May. Sowed the seeds in furrows about one foot apart. In ten days the carrots could be just perceived above the surface of the earth, and in six more the rows were plain. They were then hoed. In twenty days more they were hoed and weeded. In two weeks from this time they were thinned, those left standing in the ground remaining about one inch from each other.

In the beginning of July they were hilled, so as to cover the top of the root, and left until the beginning of November, when the crop was collected, and measured *one hundred and sixty bushels*, or at the rate of 1280 bushels per acre! He adds:

"As the foregoing was intended as an experiment, I was particular in keeping an account of the expenses attending it, and find that the whole amount for manure, labor, &c., was $15.33 including $1.33 which I paid for one pound of seed.

"I am convinced that a farmer who has a considerable stock to provide for, cannot appropriate a few acres of his land to a better purpose, than that of raising carrots. Their nutritious property supplies the use of hand food for beeves; and they are extremely serviceable to milch cows, who require something better than dry fodder during our tedious winters. Horses are very fond of them, cut in pieces of three inches in length, washed clean, and given to them in proper quantities."

With the improved modes of culture which have been introduced since Mr. Blagge wrote the above, we have no doubt that carrots may be raised much cheaper than they could be at that time; for less than one-half his cost, indeed. A man can perform as much in a carrot field in one day, with Harrington's Cultivator, as he could in three with a common hoe, and do the work as well.

—The Kennebec Union Agricultural and Horticultural Society elected officers in Gardiner, March 2. President—Wm. H. Merrill, West Gardiner; Vice Presidents—Benj. Berry, Litchfield; N. Foster, Gardiner; A. D. Knight, Hallowell; Secretary—S. Smiley, Gardiner; Treasurer and Collector—Cyrus Libby, Gardiner.

DWARF PEAR TREE.

Is n't that beautiful? Does n't it almost make your mouth water? And yet there is no law that forbids the growth of such a tree in your garden, or of one a little less symmetrical, if you do not happen to find a tree equally regular in its proportions, or if yours should refuse to limb out just according to the picture. If you want such a tree, now is the time to set it out; and our object in getting up the cut is, we confess, purposely to "lead you into temptation."

A PREMIUM FARM.

A business correspondent expresses much gratification from a late visit to the farm of S. M. Thomas, of Wayland, Mass., to which the first premium of the Middlesex Agricultural Society was awarded a few years ago. The predecessor of Mr. Thomas, though considered a smart business man, did not succeed in making a living upon it. The present occupant has had possession about twenty-five years. He is not a trading man, and has brought up this farm to its present good condition simply by industry and strict attention to business. The buildings are all new, well situated, capacious and convenient—especially the large barn cellar. The soil is mostly a rich loam, not much clayey, yet well adapted to grass. In consequence of the labor required to make milk, Mr. Thomas does not sell it as formerly. He prefers to feed steers which he buys to keep over. He must have stock of some kind to make manure, as he cannot buy it for less than ten dollars per cord. Our correspondent speaks of "a noble pair of team horses, six oxen, about thirty head of neat stock, and twenty hogs," whose contributions to the manure heap are most carefully husbanded, as is all that which results from the production of about 3000 pounds of pork a year. Mr. Thomas had 300 cords of fire wood, cut the past winter, all but about fifty cords of which has been drawn. The blocking-up snows have interfered, and delayed the finishing of this job until it is treading on the heels of the spring work.

NEW PUBLICATIONS.

THE VEGETABLE WORLD; being a History of Plants, with their Botanical Descriptions and Peculiar Properties. By Louis Figuier, author of the "World before the Deluge," and other popular works. Illustrated with 446 engravings, interspersed through the text, and 24 full-page Illustrations; chiefly drawn from Nature by M. Faquet, Illustrator to the Botanical Course of the Faculty of Sciences of Paris. New York; D. Appleton & Co., 445 Broadway; Boston: Lee & Shepard. 1867. 576 large 8vo pages, with a full index.

As respects paper, type and illustrations, this superb volume is in the highest style of English art. From the little cut of a potato plant on page 468 to the full-page illustration of the Great Tree of California, the perfection of the engraver's art is wonderfully displayed, and most happily unites the sentiment of the artist with the precision of the naturalist. Though less capable of judging in respect to the scientific ability of the text, we believe it is entitled to a similar hearty commendation, though possessing in a high degree the attractiveness of popular description. The work is divided into four parts: 1. the Organography and Physiology of plants; 2. The Classification of Plants; 3. The Natural Family of Plants; 4. Geographical Distribution of Plants on the surface of the Globe. As a present to a friend who loves and appreciates the flowers and plants of the earth, or as an acquisition to a library to which children have access, we recommend this volume as one well calculated to please the eye, to instruct the mind and to elevate thought.

CHEMISTRY.

During the past winter we listened with great pleasure to a lecture on the question What has Chemistry done for Agriculture? by Dr. JAMES R. NICHOLS, of Haverhill, Mass. The same lecture was delivered be-

fore the Board of Agriculture in Salem, with great acceptation, and we have it now before us in pamphlet form.

We have room at present for only a single extract, which is of so much value in this age of seeking after fertilizers, that we embrace the earliest available moment of laying it before the reader. It has been tested by a farmer near us, and found excellent. It is as follows:—

"Take one hundred pounds of bones, beaten into as small fragments as possible, pack them in a tight cask or box with one hundred pounds of good wood ashes. Mix with the ashes, before packing, twenty-five pounds of slaked lime, and twelve pounds of sal soda, powdered fine. It will require about twenty gallons of water to saturate the mass, but more may be added from time to time to maintain moisture. In two or three weeks the bones will be broken down completely, and the whole turned out on the floor, mixed with two bushels of dry peat or good soil, and after drying will be fit for use."

NORFOLK COUNTY, MASS.

At the annual meeting of the Agricultural Society of this county, at Dedham, March 27, the following officers were elected:

President—The Hon. Marshall P. Wilder, Dorchester.

Vice Presidents—Amos A. Lawrence, Brookline; Otis Cary, Foxboro'; John Gardner, Dedham; Stephen W. Richardson, Franklin; Elijah Tucker, Milton; Henry Grew, Dorchester.

Corresponding and Recording Secretary—Henry O. Hildreth, Dedham.

Treasurer—Chauncey C. Churchill, Dedham.

Executive Committee—Marshall P. Wilder, Dorchester; Cheever Newhall, Dorchester; H. Hollis Hunnewell, Needham; Aaron D. Weld, West Roxbury; Joseph H. Billings, West Roxbury; Francis P. Denny, Brookline; William R. Mann, Sharon; Truman Clarke, Walpole; Chas Breck, Milton.

Finance Committee and Auditors—Ira Cleveland, Dedham; Charles Hamant, Medfield; E. S. Rand, Jr., Dedham.

Mr. Wilder was elected member of the Board of Agriculture. He was also recognized as the delegate of the Society to the Paris Exposition, by a series of complimentary resolutions.

PRODUCT OF ONE COW.—Mr. S. King, North Monmouth, Me., has a cow from which he made the last season 212 pounds butter, 223 pounds of cheese, raised one calf, and sold $10 worth of milk. As this was his only cow, of course what milk the family used was also taken from her.

PROLIFIC CORN.—Dr. Wm. Morse, of Canton, Mass., raised last season from one kernel of corn, fourteen ears containing 1672 sound kernels. The variety was the white "pop-corn." The land was prepared for carrots by spreading two cords of horse manure to the acre and plowing it in. The corn was planted at irregular intervals among the carrots, the seed about six or eight feet apart. This kernel sent up five stalks.

WOOL SAMPLES.—We learn by the New York *Tribune* that the distinctive samples of wool required by the late law, were received by the Secretary of the Treasury, April 11. The writer says, "It is understood that an invitation has been extended to the President of the National Wool Growers' Association, and also to the President of the National Wool Manufacturers' Association, to visit Washington and examine the samples."

For the New England Farmer.

A PLEA FOR PROGRESS, THIS TIME.

I am really glad that one of your correspondents has stepped boldly out and taken side against raising poultry on a large scale. The article [see FARMER, March 16] will occasion reflection and discussion, and that is what leads to improvement.

It will be apparent to every reader that the theory of "N. S. T." is, that hens, in order to be profitable to the farmer, must, substantially, take care of themselves. They must "pick up" their living in a free and inexpensive way. And he would urge that, against such an advantage, the *cultivator* of fowls—if you will allow the expression—stands no sort of chance.

Now, Mr. Editor, I frankly confess that I belong to another school altogether. I will not consent to go back to the days of our fathers, when a mowing machine was looked upon as a new-fangled notion, and contest this matter on the *picking up* theory. We might as well expect our horses or our cattle to gain their subsistence from the corners of our yard, or from the road-side, as our hens. My own experience teaches me that fowls, under *judicious* confinement, fed from the granary, and well cared for, are far more profitable than those which rove about the fields and look out for themselves. I should yield the ground at once, without a word of discussion, if I thought otherwise. I know that some of your readers, who haven't lived in vain, will smile just a little at this "answer" to my plea.

As for the distempers and epidemics which constitute the ground work of the other prominent reasons why raising fowls on an extensive scale proves unprofitable, that appears to me to be mostly fancy. Shut a dozen fowls up in an empty flour barrel, and I should expect an awful mortality among them before a great

while. Or let the coop be enlarged, while little or no attention is paid to cleanliness, and the result will be precisely the same. But when allowed to run in large and well-constructed yards, with plenty of clean, fresh water, and plenty of green and growing vegetables to pick at during summer; when their roosts and their nests are kept scrupulously clean and free from vermin, with good ventilation, fowls will flourish and repay all the care bestowed upon them. Making up our minds that a thing can't be done because others have tried it and failed, is unworthy of us at this late day. It is a very cheap argument, yet often met with.

Fifteen years ago, when I moved into the "suburbs," I thought I must have some hens, to complete the rural picture. At first I tried the picking up theory, but I very soon found that this would not do. I got no eggs of any account. And besides, my neighbors were after me. Their gardens, as well as my own, couldn't stand the mischief.

Then I tried the shutting up; had a yard made a little larger than a barn-door, with nice nests, and all that. And I know the fowls did not suffer for food, either. All this occupied three years. But still the eggs were not plenty.

After a while a friend from the city came out to sup with me. Of course I had to show him my garden and descant upon its merits. The crop of pears—and a splendid crop it was—pleased him wonderfully, and he complimented me highly. To my surprise, he knew the names of every variety as well as I did. As I had taken him for a "novice," this puzzled me not a little. However, I afterwards found out that he was a constant visitor at the Horticultural Society's rooms, in the city, and had a good memory to back his good sense. I took him to see my poultry, too; but here his compliments were not profuse. He asked me in a quiet way, I remember, if my hens laid well. I told him frankly that they did not. "Well," he replied, "they would be fools if they did, in such a place as this!"

I felt nettled at his frank criticism, for I had flattered myself that I took excellent care of my biddies. He must have noticed my confusion, for he at once went on in his good-natured way to offer me some hints in regard to the business. Confound the fellow, I don't believe he ever raised a hen in his life. He was one of your blackboard farmers. But he had an eye like a hawk, was a great reader, and a keen observer; and I at once saw that he was *au fait* on the subject of poultry as well as pears.

"You see," he said, "hens are living, breathing creatures, just like men and women, and they want fresh air. They can't get it here. Then look at that dirty water; possibly they drink it, because they are obliged to. Just look here," and as he said this, he directed my attention to the roost, "see the vermin!"

I will not go through the entire lecture; the above is a fair specimen of the whole. Suffice it to say, it did its work effectually; or rather, it put me in the way of doing mine. The difficulty stared me in the face as plain as day. And as soon as my friend was on board the cars to go home, I began to arrange for a revolution about my hen-house. I had my yard enlarged ten-fold. The old nests, which had been constructed stationary, were removed, and movable ones were put up, so that every inch of the room could be occasionally cleaned and white-washed. Then the fowls were made to roost in the barn-cellar, which was warm, light enough, and well ventilated.

I will not tire you with details, but only say, that my success was *perfect and satisfactory*. My hens at once become profitable, and yet I did not do all that might have been done to make them so.

"N. S. T." is shy about coming up to the main question in my plea. He doesn't mention a word about the "reasonable and profitable course" pursued by the gentleman in Manville, mentioned in a late FARMER. He enclosed an acre and a quarter of land with a high fence, and in that yard he kept about one hundred and fifty hens. During nine months of the year he tells us these fowls gave him a *net* profit of two dollars a day. My question was, why couldn't *another* similar yard be constructed alongside, for a like number of fowls, and double profit be gained? If not, *why* not? The second yard would cost less than the first, and it would be less labor, proportionally, to attend to two yards than one.

A single point more and I will close. Your correspondent offers the proposition that hens, being quite modest, when obliged to lay in nests which are used by other hens, become quite obstinate and indifferent about laying at all. Does he seriously mean this? That, through good care and good keeping, we can *stimulate* prolification, all will admit; but, this being done, I have yet to learn that nature's work can be, substantially, arrested at the effort of either the hen's modesty or her obstinacy. Equally absurd is it to talk about her laying eggs to repay the kindness of her master for feeding her. She cares not a rush for her master or her mistress, either. She lays because it is nature's work, and always "without a thought of repaying" any mortal's kindness. If seriously put forward, both these propositions may be set down, very safely, as "blackboard" physiology.

Nor do I at all agree with "N. S. T.," when he intimates that the Creator has interposed any bar to the progress of his children in any direction except that which pertains to absolute impossibility. We live in a world of progress. We do not know as much as our descendants will, a hundred years hence, by a great deal. They will look back upon us and our ways and wonder at our simple ideas; while they,

in their turn, will be considered as simple as we. And so I hold it to be irrational to point out anything not circumscribed as above stated, and say that it cannot be done. To say that it *is not* done, is no argument. IDEX.

For the New England Farmer.

NOTES ON GRAPES.

The result of fifteen years' experience in grape growing, has given me the following rules as essential to success:

The soil *must be* well drained. Other things being equal, elevated land is best. I prefer a southwestern exposure. Rich and long cultivated land is unfit for the best development of the grape. The soil should be trenched to the depth of from eighteen inches to two feet. For field culture this can be accomplished by the sub-soil plow. One of the most important points is to keep the soil in its original position, the top soil above, and the subsoil below.

For field culture, manure the same as for corn, when you expect to get one hundred bushels to the acre. This gives the plants a good start the first year, when wood and not fruit is the object. Plant about six inches deep. Distance according to the kind. Concord, twelve feet apart in the row; Delaware six feet. *I prefer* rows running North and South. Rows may be six or eight feet apart. Chestnut or cedar posts, and wire is the cheapest trellis. No. 10 wire is the best size. In the spring give the wire a coat of paint oil, using a woolen cloth, and it will last a lifetime. Fasten the wire to the outside of the posts with a small wire staple.

For field culture I prefer the Concord and Hartford. The objection to the latter that it drops its berries is of no account. No one wishes early grapes to *keep*. For the garden, add Delaware and Rogers' Hybrids, with one vine each of Diana and Allen's Hybrid. The two last should be taken down and covered in the fall.

The Concord, Hartford, Delaware, and Nos. 1, 3, 4, 15, 19 and 33 of Rogers' Hybrids are alike hardy with me. *As a class*, I prefer Rogers' Hybrids. So well assured was I of their superior excellence, that in 1855 the above numbers were entered for premium at the Plymouth County Agricultural Exhibition, as the best six varieties of Hardy Native Grapes, in competition with all other varieties, —using the Delaware as the test. They received the first premium, and the committee gave the No. 3 the first premium of the best single dish—a grape pre-eminent above all others—enormously productive, twice as large as the Delaware, same color, and *just as good*. No grape that has been tested as extensively as the Concord can compare with it in qualities that make it a general favorite. To-day it is the grape for the million.

It will be noticed that many varieties in cultivation and for sale, I have not mentioned. If a man has money and leisure he can afford to buy them. If not, he cannot. In a few years the question will be settled whether the immense amount of printer's ink and paper has benefited most the *sellers* or the *buyers* of grape vines. L. W. P.

North Bridgewater, Mass., March 18, 1867.

For the New England Farmer.

ABSORBENTS---POTATOES---WHEAT.

MESSRS. EDITORS:—In the FARMER of Feb. 2d, Mr. "Lectum" makes the speakers at a recent Farmers' meeting say some things which appear absurd. Where the meeting was, deponent saith not; but from some of the statements I should think it must have been on some other planet, rather than on this terraqueous globe.

"E. B." said he did not think liquid manure, from any animals, required any absorbent in the winter season,—the solid part being sufficient to absorb it all. I should like to know if his animals are well supplied with water; and whether he ever fed his hogs on pumpkins.

"F. D." said swamp muck is over 90 per cent. water. It is about 200 per cent. water; 100 pounds of muck when dry will absorb very nearly 200 pounds of water.

Dry Soil as an Absorbent.

I wish to say a word to Lectum through the FARMER, as I can do it in no other way, not knowing his real name or Post-office address. He asks, "Will it pay to dry and house common soil for an absorbent?" I say yes; it will pay abundantly. The same quantity of common soil by measure, will absorb as much liquid as meadow mud. If one has four cows, and will keep them in their stalls a suitable length of time, they will thoroughly saturate considerably more than one bushel of dry soil every day, in summer and in winter,—notwithstanding what "E. B." says to the contrary. This will in a year increase the quantity of manure more than four cords; while the quality will be but little if at all injured.

Cutting Seed and Raising Potatoes.

In the FARMER, Feb. 9th, under the heading of "Culture of Potatoes," it is recommended to cut them fine—not having more than two eyes to the piece—and put two pieces in the hills. It would be a great benefit to some farmers if those who recommend such scant seeding would prove the truth of their theory by accurate experiments.

I have received a private letter containing several inquiries, which, for several reasons, I choose to answer through the FARMER. The writer says:—

I notice you put three and four butts in a hill. Please state the number of germs or eyes each butt contained, and about the quantity of the potato you planted. Now, so many butts in a hill require a vast amount of seed, and so great a crowd have a small chance to expand and grow. Would it not

be far better to distribute the butts into drills,—say ten to twelve inches apart?

The number of eyes contained in each butt I do not know; probably not as many as were contained in the seed end which I cut off. The first bushel,—60 pounds,—of potatoes from which I cut the seed ends last year (which was a fair specimen of the whole) contained 392 potatoes; the butts weighed 49 pounds 6 ounces, seed ends 10 pounds 10 ounces; the butts, therefore, were a little less than five-sixths of the whole. Had you seen my potato field last August you would have admitted that they did "expand and grow." The vines completely covered the ground. In my first experiment, the product was nearly at the rate of 300 bushels to the acre. In my second experiment, on a pile of old mud without manure, the product was at the rate of over 280 bushels to the acre. I never had any experience in planting in drills. If all parts of the soil are within the reach of the roots, which I suppose to be the case when the hills are but three feet apart, I can see no advantage in drills. If your Long Island farmers would plant a whole butt, instead of a quarter, and thus plant four bushels where they now plant but one, I am confident they would raise larger crops, over and above the extra amount of seed. I can see no harm in their trying the experiment and communicating the result to the FARMER.

Whether the disadvantage of a larger number of small potatoes would more than counterbalance this increased product, I cannot say. For myself, I do not consider *small potatoes* an entire loss, as I have animals quite willing to eat them. You say the farmers on Long Island in digging their potatoes turn them out with a four or five-tined flat fork which takes them about all out at one pitch. From this, I suppose, the implement is made similar to a manure fork. Would it not be better if so constructed as to operate as a hoe? If the tines were round instead of flat, I should think they could be used with greater ease, as they would not meet with so much obstruction from the soil.

Raising Wheat.

But few farmers in this locality have attempted to raise wheat, and those who have, consider it an uncertain crop. There is often a large growth of straw, but the wheat is apt to blight.

Pasturing Mowing Lands.

I wish that some one who holds the pen of a ready and powerful writer, would write a premium article upon the injurious effects of feeding mowing lands in the fall and spring. *Spring* as well as *fall* feeding is, to some extent, still practiced. If the attention of farmers could be fairly turned to the subject, I think we should soon see a difference in their practice. Fall feeding is not practiced as the result of any well matured plan; it is not supported by any sound argument; but is excused on the plea of an imaginary necessity, and is practiced by thoughtlessly following an ancient custom. E. B.

Derry, N. H., March 6, 1867.

For the New England Farmer.

METEOROLOGICAL RECORD.

February, 1867.

These observations are taken for and under the direction of the Smithsonian Institution.

The average temperature of February was 29°; average midday temperature 36°. The corresponding averages for February, 1866, were 24° and 29°. Warmest day, the 9th, averaging 44°; coldest day, the 10th, averaging 16°; coldest morning, the 11th, thermometer 0°. Range of temperature from 0° to 52°. Average height of mercury in the barometer 29.30 ins.; average do. for February, 1866, 29.34 ins. Highest daily average 29.93 ins.; lowest do., 28.65 ins. Range of mercury from 28.63 ins. to 29.99 ins.

Fourteen stormy days. Rain fell upon five days. Amount of snow 12.50 ins. Amount of rain and melted snow 4.04 ins. Twelve stormy days, six of rain, in February, 1866, with 14.50 ins. snow, and 5.45 ins. of rain and melted snow. There were two cloudless days; on three days the sky was entirely overcast. No cloudless days and seven of total cloudiness in February, 1866.

This has been a very warm month as the comparison with record for last year will show. It is also remarkable in passing by without the "cold snap" which usually occurs in February. The warmth of the weather, with some rain, effectually disposed of the sleighing, making us about as short a season for sledding this winter as last. This absence of extreme cold is, however, an inestimable blessing to thousands of poor families in these times of high prices. A. C.

Claremont, N. H., 1867.

HOW TO LAY SAWED SHINGLES.

MESSRS. EDITORS:—Mr. Mansur, in his article in the *Farmer* of Feb. 21st, informs your readers how to "double the value of sawed shingles;" and I think well of his advice, though I have never tried the experiment. I am surprised to see how little attention farmers pay to the subject of roofing.

This subject is rather out of their line of business; but is it not as well to have a good roof, as to have good hay spoiled under a poor one? Farmers are not aware how soon their roofs need repairs where they have been constructed with cheap materials, such as sawed shingles with the sap on them. To lay shingles well, requires some practice; and to lay sawed shingles and make the best work that can be made with them, requires still more ex-

perience; or at least a more careful eye. Most all sawed shingles have a rough side, and a smooth one, i. e., they are sawn from the bolt somewhat across the grain of the wood; the grains lapping one over the other on the sides of the shingles should be laid so that the water will run over and not into them as it flows from the roof; in other words, lay them "right side up with care." If perfectly dry, they should be laid about one-eighth of an inch apart, to give them room to swell in wet weather; and should have but one nail in each shingle. Here is where most persons fail. In nailing, it is often said that we cannot nail shingles too well. "That's so," Messrs. Editors, but we can, and there is danger of nailing sawed shingles too much. Where they are nailed down too close they retain moisture, and consequently rot sooner than they would if one nail only were used in each shingle, which gives them a chance to curl up a little, and admit the air to circulate on the under side. I have had much experience, not only in Maine, but in other States, in this matter of shingling, and I find that the most practical or experieneed builders prefer the above method of laying loosely, all kinds of sawed shingles. To make the most durable roof with such materials, I would have it first covered with narrow boards, put about three inches apart, across the rafters and then lay the shingles on them as I have described, and I doubt not that it will pay to immerse them in lime-water, as suggested by Mr. Mansur.—*C. Butterfield, in Me. Farmer.*

RAISING PEAR TREES.

Dr. VAN MONS, of Belgium, has written a letter to a correspondent of the *Magazine of Horticulture*, in which he describes a new mode of obtaining pear trees, which if reliable, will result in increasing the number of trees indefinitely. We suggest to all who are transplanting pear trees to make experiments according to the process described below, as it will cost little or nothing to do so.

But if the fact be, as he describes, why have not hundreds of us who have been digging up pear trees for the last twenty years, and leaving portions of their roots in the ground, found them springing up and making fine trees? Let us try it. The Dr. says:—

"I now propagate for myself and intimate friends the most choice varieties of pears, which I obtain by means of the roots. Not a single one fails in this new process. It is immaterial in what manner they are set out. This method I discovered accidentally, in consequence of some roots on which I intended to graft other kinds of pears, being thrown on the ground and covered with a little earth, to preserve them until used for that purpose, and which were lost sight of and forgotten until the next spring, when all of them sent up stocks, which, in the autumn, were as tall as those raised from the seed of two years' growth. They can be set out in the spring as well as autumn. If I had sooner known this method, I should not have lost a single one of my new varieties of pears, for roots could have been taken from all the kinds in my large plantation at the time of its destruction.

Such roots should be selected as have one or more terminal fibres, and those that are often cut off or left in the earth when a tree is transplanted succeed well. They cannot be too small, but should not be larger than the finger. The wounds at the large ends of the roots should be covered with the same composition to protect them, as in grafting. They must be set obliquely."

WOOL TARIFF.

The following, we believe, is a correct statement of the comparative rates of the tariff of June 30, 1864, and of the new act of March 2, 1867.

	Old Rates.	*New Rates.*
Clothing Wools, value 12 cts. pr lb. or less.	3 cts. per lb	
Clothing Wools, value over 12 cts. and not over 24 cts.	6 cts. per lb	10 cts. per lb. and 11 per ct. ad val.
Clothing Wools, value over 24 cts. and not over 32 cts.	10 cts. per lb and 10 pr ct.	
Clothing Wools, value over 32 cts. per lb.	12 cts. per lb and 10 pr ct.	12 cts. per lb. and 10 per ct. ad val.
Carpet Wools, valued at 12c or less per lb*	3 cts. per lb	3 cts. per pound.
Carpet Wools, valued over 12 cts. per lb*	6 cts. per lb	6 cts. per pound.

*Carpet Wools, as Donskoi and other Russian, Cordova or Spanish, Valparaiso, Egyptian and East India Wools compare as above.

Combing Wools, as Leicester, Cotswold, Lincolnshire, Canada Long Wools, Alpaca and Goat's Hair, compare precisely as Clothing Wools.

In reply to a correspondent who criticises the new law rather severely, and who says "it must take a pretty fine sight to see where the great advantage to the wool grower of the new tariff act comes in," the editor of the Ohio *Farmer* advances the following facts and figures in justification of a more hopeful view of the subject:

Of the 56,000,000 pounds of wool imported in 1866, only about 150,000 lbs. or less than one pound in 300, cost over 24 cents per lb. in the port whence exported; therefore, nearly all the wool imported last year paid but 3 to 6 cts. per lb. duty. Mestiza, all fine South American wools, imported in 1866, cost in Buenos Ayres 10 cents per lb., and paid a duty of 3 cents per lb. Wools from the Cape of Good Hope cost about 14 cents per lb., and paid 6 cents per lb. duty; these two classes comprising nearly ¾ of all the wool imported. The old tariff, fixing the duty at 10 cents per lb. and 10 per cent. *ad valorem*, on wools costing

24 to 32 cents per lb., was a dead letter, because no wools, or next to none, were imported that cost over 24 cents per lb.

The new tariff classifies all wools imported into three distinct classes, indicating by name, in the first and second classes, all wools that come at all in competition with ours, and fixing the duty at 10 cents per lb. and 11 per cent. *ad valorem*, on all wools costing 32 cents per lb., or *less* (not 24 cents per lb. or *more*, as under the old tariff). So that if wools included in the first and second classes cost but 5 cents, or any sum less than 32 cents per lb., they pay a duty under the new tariff of 10 cts. per lb., and in addition thereto, 11 per cent. *ad valorem;* and ninety-nine one-hundreds of all the wools imported are included in classes No. 1 and 2. It is only the coarse native South American wools, and wools of like grade from other countries, that are included in the third class, and come in at 3 to 6 cents per lb. duty. But those wools do not compete with ours.

To recapitulate: Buenos Ayres, Mestiza, and all fine South American wools, cost to import, last year, 10 cents per lb., and three cents per lb. duty in gold. With gold at 135, the duty on a pound of wool was 4 cents in greenbacks. Take the same wool under the present tariff—a pound costs in Buenos Ayres 10 cents and 10 cents per pound duty, and in addition thereto, 11 per cent. *ad valorem*, and the duty on a lb. of wool is 11 cents in gold or 15 cents in greenbacks, which is 11 cents per lb. more duty than was paid in 1866. The Cape wools cost last year about 14 cents per lb. and paid about 6 cents per pound duty; with gold at 135 it would make the duty paid 8 cents per lb. in greenbacks. The same wool now pays 10 cents per pound and 11 per cent. *ad valorem* duty, which, reduced to greenbacks, is 15 cents per pound, or leaving out fractions, 7 cents per pound more duty than under the old tariff.

NEW PUBLICATIONS.

TRANSACTIONS of the Middlesex, (Mass.,) Agricultural Society, for the year 1866. With a List of Premiums for their 73d Exhibition, at Concord, Oct. 3 and 4, 1867; Officers, &c. Concord: Printed by Benjamin Tolman. 1867. Pages, 120.

This well printed pamphlet of 120 pages contains, beside the usual valuable record of the Society's Transactions for the year past, a list of premiums, officers, &c., for the present year, which is the seventy-third of the Society's existence. Addison Gage, West Cambridge, President; John Cummings, Jr., Woburn, and Simon Brown, Concord, Vice Presidents; John B. Moore, Concord, Sec'y; Richard Barrett, Concord, Treasurer. Fair at Concord, on the new grounds, October 3 and 4, 1867.

—According to British statistics, animals and children born in the latter part of summer are not likely to be long-lived.

FARMERS' GARDENS---No. IV.

Deepening the Soil.

IN the cultivation of most garden products, depth of soil is always a matter of importance. Lands on which the vegetable stratum is thin, are deficient in permanent productive power, and require a much larger application of manure, and more thorough working, than those which have greater depth. Digging two spits deep, as is practiced in Europe, or gradually going deeper with the plow, tends to obviate this difficulty, and will eventually render the soil productive, if the requisite care be exercised in cropping and manuring.

Where the upper stratum is thin, and reposing on a poor subsoil, a speedy change may be effected in the following manner, although from the great cost of labor in this country, it may not be advisable to adopt it except on a limited scale.

Along the margin of the piece to be improved, be it more or less, throw the soil, subsoil, sods and all, into a winrow on one side, to the depth which is desired, say twelve or twenty-four inches. Then commence on the side in the direction the improvement is to proceed, and deposit all the mould and sods taken from the top, in the bottom of the first trench, throwing that taken from the bottom of the second trench over on to the top of the first, and in this manner, proceed till the work is done. Then cart on old, well-decomposed compost, mixed with an equal volume of green, unfermented stable manure, and work the whole thoroughly into the yellow earth until the virgin soil is approached. A liberal allowance of manure is requisite in order to hasten the decomposition of the soluble silicates contained in the fresh earth, as well as to insure the more ready absorption of the fertilizing gases from the atmosphere, which are necessary to impart vigor and activity to its latent powers. A small quantity of fresh manure sprinkled in lightly as the filling goes on, will be of great service, and, indeed, any kind of vegetable matter, such as straw, forest leaves, or chip manure, will materially assist the pro-

cess of enriching, and furnish food for the plants.

Lands treated in this manner stand the drought much more successfully than untrenched grounds, and are always found to be more productive, with the *same amount* of manure, than the deepest soils in their natural and unworked state.

On gardens we have seen it tried repeatedly. It is well known that the sand and coarse gravel excavated from wells and cellars, will, when exposed to atmospheric influences, imbibe principles of fertility rapidly, where no manure is used, and become in a short time covered with verdure. We have known the common yellow, sandy loam, taken from the pit and spread upon upland mowing fields, with the happiest results. This loam is full of fertilizing salts, which, upon being brought to the influence of the air and rains, impart them to the roots of the grass with surprising effect.

Plaster and charcoal, each have a powerful tendency to absorb enriching principles from the air, and in all experiments like the one we have suggested, they can be profitably employed. The second year after digging, a very marked improvement will be apparent, and a single operation will have a decided influence for many years.

Those who have but little land should attend to this suggestion if they wish to make a garden highly productive. We have tried it on garden lands, accompanied with thorough draining, and think we have doubled the crop, using no more manure than we did before the trenching.

The Soil Breathes.

When a soil is brought into the genial and healthful condition which we have attempted to describe, it has a vital action energizing every portion of it, and it really *breathes*, as truly as animals do. An ingenious and philosophical writer says: "A few years since, if one asserted that trees had lungs and breathed, he would have been held to an argument to prove it; just as a few years earlier nobody would have believed that a fish's gills, and the leaves of a tree, and the lungs of a beast, all performed the same office, that of aerating, or airing the blood or sap.

"The soil breathes. How does it breathe? Its circulating fluid, the blood of the soil, is water; this comes to it from the air, and is already aerated, (that is, filled with air.) This soon loses its gases by contact with the soil, just as the arterial blood fresh from the lungs, loses its oxygen when passing its circuit in all parts of the body. The blood comes back to the lungs for more oxygen, but the blood of the soil cannot do this, so *we must let the air in*, to come in contact with it."

From this interesting exposition of nature's workings, the gardener will see the necessity for "stirring the soil as deeply as practicable during droughts, but not to interfere with the roots of growing plants,—so that a deep and light soil shall invite a free circulation of air beneath the surface. Hot air, the moment it passes beneath the surface becomes very moist, from the water which it originally contained. and it deposits it; thus not only airing the soil, but adding to its moisture. Cold air can hold but little moisture, but hot air dissolves an immense quantity, which it deposits when it cools, or on cool surfaces. Who has not noticed, of a winter's day, a locomotive leaving behind it a snowy cloud of vapor, like a comet's tail, often floating for a minute after the train has passed? Think of this, and watch the steam car on days when the hot breath, just as full of water as in winter, is puffed out into the eye of the sun, and not steam enough shows to make a shadow, it is so quickly absorbed by the air."

These general remarks are sufficient to suggest to any observing and reflecting person, how he may secure at small cost, a garden plot that will give him scope enough to raise all the fruits and vegetables that a family needs for its own use. It will require some labor, and thought, and care, and so it will if he plow his fields, builds his house, or sells his merchandise. But the soil, once brought into condition, and followed by generous dressings and clean culture, it may be heavily cropt for generations without impairing its fertility.

More Profitable Farming.—A Framingham, Mass., correspondent notices another instance of profitable farming in that town. Three years ago Mr. M. M. Fisk bought six acres of rather light land, on which he has expended for purchase money and labor $402. The value of the three crops—potatoes, corn, and rye seeded, with grass—has amounted to $900.

DO SHEEP IMPROVE PASTURES?

There have been great improvements in the culture of sheep within the last twelve years; in the texture and quantity of the wool, and in the quality of the flesh. Their numbers have greatly increased—to a surprising degree in the West—and even in New England an unusual attention has been paid to them. The increase in 1865 was over *four millions*. In 1860, the number of sheep was estimated at 22,471,275, and in 1866, at 32,695,797—a gain of 10,224,522. Those who have engaged in their culture have found it sufficiently remunerative to encourage them to go on. The introduction of machinery into this country to manufacture delaines, and goods of a similar character, has made a demand for long wools, and especially that of the silky cotswold, which have been found as profitable as the fine merino wool. On the other hand, the demand for the merino in the great West, in Pennsylvania and Ohio, has been so great as almost to outstrip supply, so that in either of these branches of sheep culture, there is no present prospect of lack of demand.

Our people are also educating themselves to the use of mutton as food, instead of so much beef and pork. It is admitted, we believe, by all who have given attention to the subject, that mutton is a wholesome and nutritious food. It is certainly easily and quickly brought to maturity, and, unlike beef, gives an annual return in wool, which pays a portion of the expense of raising as it goes along. Taking these points into consideration, it is the opinion of many persons, that the culture of sheep may be made profitable in most of the towns of Maine, Massachusetts, Rhode Island, Connecticut and New Hampshire. It is already so in the latter State, and in Vermont.

It is thought by many persons who have had the care of sheep and cattle on the same farm, that where eight or ten head of cattle are kept, *six sheep* may also be added without additional cost to the owner; that is, that the *manure* which they leave on the pastures, and in their pens, and the income from the sale of lambs, will pay the cost of keeping and care, and leave the annual clip of wool and the carcases of the sheep as clear gain. There are some reasons for such an opinion, and granting, for the present, that it is sound, let us see what such a practice would do for our farmers. We have in New England, as by Commissioner's Report, 183,942 farms; six sheep to a farm would give 1,103,652, which, at $5.45 per head—the average price in February, 1866—would give a capital of six millions fourteen thousand, nine hundred and three dollars, and forty cents. If the average clip of wool was three pounds per head, at fifty cents per pound, it would give one million six hundred and fifty-five thousand four hundred and seventy-eight dollars! A nice sum to be divided annually among the farmers of our rough climate an rocky hills!

If the points suggested above are correct, or approach correctness, whatever is said or done to discourage the culture of sheep in New England may have an unhappy tendency upon the interests of the farmer. We have been led to these remarks by reading the statement of Mr. Matthew Smith, of Middlefield, Mass., as given in the report of the Secretary of the Middlesex Agricultural Society, for 1865. The latter adds: "One of your committee said to him that perhaps it would be a good thing to stock some brushy pastures with sheep for the purpose of improving the pasture. He answered by saying that you and I have heard quite often, the last five years, that sheep would improve pastures; but don't you believe one word of it, for I have always kept a large flock of sheep, and I know that it is not so."

We have no doubt but the statements made by Mr. Smith are entirely true, in his case; but "one swallow does not make a summer," nor does one experiment annul many others, made under different circumstances. We think it is a well ascertained fact, that *sheep do generally improve the pastures upon which they feed.* The history of the improvement of sheep, is the history of the improvement of the *land* upon which they have fed. The history of the *South Down* is the history of the improvement of the valleys of the Downs. Few pastures exist which afford finer feed for sheep than the famous "*Downs*" of England, a tract of land about eighty miles long and six wide, which was of chalk formation and nearly worthless. From the hills and valleys of the *Downs* came the famous *South Down* sheep. The change wrought upon these Downs by pasturing sheep upon them, enclosing and cultivating them, has been wonderful. Sheep that were previously gaunt and slab-sided, with light and comparatively hairy fleeces, soon yielded the

sweetest mutton, weighing fifty pounds per quarter, and in a large flock gave fleeces whose average weight was eight pounds each.

The improvement of *Cotswolds* is no less remarkable, and the once bleak and barren hills from whence they take their name, have been so improved by the culture of sheep upon them, that they attain a greater weight at twelve and fourteen months, than they formerly did at three and four years old!

If not greatly overstocked, pastures which were decidedly poor when sheep entered upon them, have gained in fertility from year to year. A portion of a farm in Northfield, Mass., was proverbial during many years for the abundance and richness of its feed. It had been pastured for a long time, alternately with cattle and sheep. One half this pasture was sold, fenced off and fed by cows. In a few years the part sold had essentially deteriorated, while the other, fed as it had been, remained as productive as ever, although both pieces were grazed by about the same amount of stock.

We are well acquainted with a pasture near the sea coast which many years ago was an exceedingly foul piece of land—abounding with a great variety of bushes, among which were the barberry and many climbing plants, and so closely laced and intertwined by the wild rose, that they formed an almost impenetrable jungle. Twenty years afterwards we saw the same pasture with a flock of sheep on it grazing upon a close, compact turf, covered with short, sweet grasses, and *without a weed or bush of any kind upon it!*

"How has this reclamation been accomplished?" we inquired, as we stood looking upon it.

"*By the sheep*," said our informant.

"Without plowing and seeding?" we asked.

"Yes, *by the sheep alone*," was the reply.

The pasture was quite uneven and rocky, but the sheep had exterminated every vestige of wild plants, and clothed the surface with fresh, rich, perpetual herbage.

In a report by a committee of the House of Lords, in England, in 1829, it was said: "All farmers testify that *sheep raising is absolutely indispensable to successful farming*; their *manure is necessary to preserve the fertility of the soil;* and that without them the whole kingdom would in a few generations be reduced to utter barrenness and sterility." Their importance, in this point of view, seemed to be generally conceded by the members of the great *Wool Grower's Convention*, which we attended at Columbus, Ohio, in the winter of 1864.

A report in the *Plymouth County Transactions*, says: "Some of the finest examples are afforded here of the effects of feeding sheep upon pastures that have become exhausted of nutritious grasses, and grown to bushes, brakes, briars and moss. I have seen pastures that had become almost worthless, but now green and smiling as a lawn, with every niche among the rocks covered with the richest pasture grasses, and not a blackberry vine, wild rose bush, mullein, or other worthless plant in sight."

In a report by Dr. JOSEPH REYNOLDS, of Concord, Mass., on this subject, he says: "Experience shows that sheep walks, instead of becoming exhausted, uniformly grow better, and that one of the most effective means of destroying the bushes and mosses, and bringing back white clover and sweet grasses to an exhausted pasture, is to turn upon it a flock of sheep."

Mr. RICHARD S. FAY, long a member of the old *Massachusetts Society*, and *of the Board of Agriculture*, who gave the most intelligent attention to the culture of sheep, said he had "constantly under his eye a one hundred acre lot upon which cattle a few years ago *could not live*, that now maintains in good condition a large flock of sheep; and the improvement of the pasture has been so great that a dozen head of cattle, besides the sheep, do well upon it." Mr. Fay's pasture was a rather dry and very rocky piece of land, and was reclaimed entirely by the sheep.

This change, however, can only be effected gradually. It will not do to turn a large flock upon the pasture, and keep them there, but enough to cause the sheep to crop the bushes *because they cannot get all the grass they want.* This may be done at first for a week at a time, or longer, as circumstances may exist. In this way the sheep commence the destruction of the bushes at once, by eating off their leaves. As these disappear, the sun and air is let into the sod, the rich waste of the sheep falls upon it, scattered everywhere in minute portions, and it soon springs into wonderful fertility, bringing the richest perpetual grasses and gradually driving out all the useless plants.

As the latter disappear, the grass increases, until the pasture that would support only twenty sheep will sustain one hundred in good condition.

Mr. Smith's sheep did not reduce the bushes, probably because they found all the good grass they wanted. He should have slightly *overstocked* the pasture for a week or two at a time, and we have no doubt he would then have seen the work of destruction going on.

TARIFF SAMPLES OF WOOL.

We are among those who are very anxious to believe that the manufacturers acted in good faith in their agreement to work in concert with wool growers in securing such rates of duty as would promote the best interests of both parties to the contract, and that they have acted throughout in accordance with the terms of that agreement. The appointment of a leading wool merchant of Boston, by the Secretary of the Treasury, as the sole agent of the government to prepare the samples of wool required by the new tariff law, has given occasion to those who doubt the integrity of the manufacturers to raise the cry of "sold again." In a communication to the Vermont *Farmer* by "J. W. C." of Springfield, the appointment is spoken of as "an outrageous and flagrant wrong to the wool-growers," and some of our own correspondents have spoken of it in the same bitter terms, and asked why the wool-growers were not represented on so important a commission. But as Mr. Bond is neither a manufacturer nor a wool-grower, but a buyer and seller, and unquestionably well qualified for the duties of his appointment, we have held on to the belief that both he and the government were disposed to do justice to the letter and spirit of the law, and to both parties whose interests are affected by it, and we are glad to see by the *Rural New Yorker* that a letter has been received from Mr. McCulloch, Secretary of the Treasury, in which he gives assurance that "the samples when prepared will be open to the criticism of all parties interested, and should it be discovered that, from any cause, a mistake has been made in the classification or arrangement of the distinctive samples of wool and hair, the Department will not be slow to correct it." Upon which Dr. Randall comments as follows:—

Without in the least impugning the good faith of the Secretary of the Treasury, or the integrity and other qualifications of Mr. Bond, we have to say that so far as *we* possess any information in the premises, no accredited agent of the wool-growers was consulted in making this appointment; and that when the tariff on wool and woolens was drawn up by the Committees of Growers and Manufacturers, and one of the Commissioners of Revenue, in the winter of 1865-6, that Commissioner (Hon. Stephen Colwell,) assured us that both interests would be represented, and equally represented, in the Committee to select samples—that it would only be necessary to apprise the Secretary of the understanding to ensure its adoption by him—and that he (the Commissioner) would see that he was so apprised. As the bill did not pass during the session of 1865-6, it is very probable that Mr. Colwell did not inform the Secretary of this understanding, and Mr. C. had nothing to do with the matter during the last session of the Thirty-ninth Congress. But, without knowing the fact, we take it for granted that the members of our Committee in Washington called Secretary McCulloch's attention to the arrangement.

Secretary McCulloch will be asked to submit the samples prepared by Mr. Bond to the examination and revision of a Committee of Growers and Manufacturers, selected by themselves, *before the samples are adopted as standards;* and if he accedes to this, his plan will have the same effect with the original one. We cannot suppose that Secretary McCulloch will refuse to comply with a request so palpably just and reasonable. His language above quoted ought to be understood as substantially implying so much. His decision in the matter will be placed before our readers as soon as it is received.

We think that we cannot misapprehend the views of the wool-growers of the country in acting on the hypothesis that they will not rest satisfied with having the entire selection of the custom house samples of wool confided to one man, whatever his qualifications—or to any body of men in which the growers are not equally represented with any and all *opposing* interests.

For the New England Farmer.

DESTRUCTION OF TREES AND SHRUBS.

Messrs. Editors:—In a late communication to the Farmer, I spoke of an evil practice which I fear is still very common, and which, as I hope to show, is far more mischievous than it is commonly considered. I mean the thoughtless and barbarous practice of cutting off and destroying the trees and native shrubs which, in a thousand places in the country, naturally border the old roads.

I now wish to state, as briefly as possible, some reasons why this practice should be discontinued, and why and how the mischief done, should, whenever it is practicable, be repaired.

1. It impairs the beauty of the roads.
2. It diminishes the beauty and attractiveness of the town or village.
3. It makes the roads uncomfortable, by leaving them open to the sun and exposed to the winds.
4. It increases the drought of summer, and the violence of the winds at all seasons.
5. It exposes the roads to be filled with snow drifts in winter, and to be gullied by the rains in the end of winter and in spring.
6. It diminishes the fertility of the land.

7. It tends to make our winters colder and our springs later.

8. It suffers water from the spring rains to be wasted by rushing off in floods, carrying with them the best of the soil, instead of sinking into the ground about the roots of trees and bushes.

9. It diminishes the showers in summer.

10. It keeps the little birds at a distance from the fields, gardens and orchards where they are needed.

11. It is bad economy, by destroying trees which are becoming more and more valuable, from year to year, for fuel and use in the arts, and for the fruits,—acorns, chestnuts, wild cherries, walnuts, beechnuts, butternuts, hickory nuts, shagbarks,—and by destroying the shrubs and undershrubs which produce our delicious and useful berries—whortleberries, blackberries, raspberries and others,—and the delicate hazelnuts.

12. It diminishes our happiness by lessening the enjoyment and the health of our wives and children, and of those helpless and dependent creatures which live for us,—the domestic animals and the birds,—by robbing them of the shade and shelter afforded by the trees, and

13. It does much, in many other ways, to diminish the cheerfulness and agreeableness of our homes.

Our climate has changed for the worse since the original settlement of this country. It is one of more fierce extremes. The hills, which, clothed with their forests, are the natural defence and protection of the plains, have, in many places, with strange and thoughtless improvidence, been stripped and laid bare, and the storms howl and rage over them unchecked. On the plains, the old, primeval trees have been cut down, the groves thinned, the thickets weeded away. Our broader fields are dryer and hotter in summer, and the winds over them are more unbroken, and hence, at all seasons, more violent. Delicate plants are cultivated with more difficulty than formerly. Cereal crops are more liable to be injured by drought. The deterioration is constantly going on. The thinning of a narrow border, the cutting down of a single tree, adds something to the evil.

All that can be done ought to be done, and very much may be done, to check it. The bare hill tops and their steep sides may again be covered with trees. The poorest lands, which hardly pay for cultivation, may be given back to the forest by careful planting. All the surface that can be found unoccupied, every little nook that can be spared, should be clothed or allowed to remain clothed, with native or foreign trees and shrubs.

A bare, unprotected field has the winter's snow swept off and so freezes to a great depth, and, by its slow thawing, materially retards the spring. A surface carpeted with undershrubs, such as whortleberry bushes, arrests the falling or driving leaves and early snow, and forms a fibrous blanket, to keep in the warmth of the earth and keep out the cold. Thus protected, the earth below this blanket does not freeze; the roots of the plants, large and small, forming a porous, spongy mass, of considerable depth, the loosened earth, underneath, receives and keeps the dissolving snow and trickling rain, laid up, as in a reservoir, against the hour of need. The early flowers show that spring comes first to these sheltered spots.

Every thicket, every clump of bushes, every row of trees, especially every broad ribbon of mingled trees, bushes and undershrubs, does something to soften the violence of the wind, to arrest the mists and rainclouds, and to store up a little treasure of moisture, like that just described, from the dissolving snows and the rains of spring, and thus provide a source for daily evaporation, to mitigate the heat and droughts of summer.

Whoever can look back for half a century upon almost any country town in New England, may remember many a little perennial rill of former days which has now disappeared entirely, and many a brook which once ran full through the year, but which is now, in the dry season, reduced to a diminutive runnel, whose music has ceased, and whose course is indicated only by scattered, stagnant pools or by a greener line through the meadow. The change from worse to worse, from dry to dryer, is still going on.

To stay the evil, to restore the rills, again to fill the brooks, to bring back a softer climate, will require the co-operation of all public spirited persons. Every one must compensate for the mischief he may have done. Whoever has cut down a single tree, young or old, must set out two to take its place; whoever has uprooted an old, broad-headed tree, such as an ancient chestnut or oak, ought to feel bound to plant at least ten young ones. Whoever has been, directly or indirectly, instrumental in defacing the roadside, by destroying such a border as we have been speaking of, ought to hold himself responsible for another as beautiful and as precious. Whoever has an acre of land, the cultivation of which pays poorly, will, if he has an eye to his interest, plant it with such valuable trees as will flourish there best; or, if it lie on the edge of a forest, he will let it plant itself with acorns, seeds or nuts from the forest, only taking care that the young trees shall not be nibbled down and killed by cattle or sheep. The owner or owners of a bare, unsightly hill must assume wisdom enough to manage that with equal foresight. The reward will not be the mere gratification of a sense of the beautiful. While labor is so dear as it now is, it must be economy to raise eighty bushels of corn on an acre, instead of thirty, to cut three tons of hay instead of one, both of which will be the natural consequence of

spreading the manure, and the labor upon nine acres, instead of twenty-five.

Wood for fuel, timber for building, materials for furniture and for the use of all workers in wood, are becoming every year scarcer and dearer, and trees upon the hill side or the road side, on the plain or in the valley, will be "aye growing," while the planter is sleeping, and will continue to grow when the planter shall be lying with his forefathers under their shade.

Then we must not forget the birds. We cannot get on without them, and it seems a great mistake to make no provision for them, when their co-operation is so essential to us. A few of the insects are our friends, and may make honey or spin silk for our enjoyment. Most of them are enemies, ready, and, in the absence of the birds, able to take possession of or to forestall the fruits of our orchards, the vegetables of our gardens, the crops of our fields, even the trees of our forests. We must court the alliance and friendship of the birds. We must have, near our fields and gardens, copses and thickets to invite and shelter them. We must protect them against cats and boys and idle sportsmen. The birds are always ready to be our neighbors. They work by us and for us, and do not like, and ought not to be obliged, to go far for their homes. They are pleasant and social neighbors. It is pleasant to see their delicate shapes and graceful motions, and to hear their songs. Their ceaseless activity is a perpetual lesson to us. It is pleasant to have meadows, wheat, peas, and turnips that have escaped the fly, and to gather apples and pears with no other marks upon them than the remnant of the blossom. These pleasures and advantages are only to be secured by the constant co-operation, throughout the year, of the birds. We shall soon see the necessity of increasing their numbers by importing them from Europe.

Whoever has had the good fortune to spend a summer in Old England, must have brought away in his memory, many charming pictures of rural scenery unsurpassed elsewhere. One beautiful element in this scenery is the hawthorn hedges, flowering in spring, the resort and home of the birds, varying with the seasons, sometimes a little ragged, always picturesque. In the agricultural counties you have to look in the hedges for the wild shrubs and trees, and along their borders for most of the wild flowers. Nowhere is there anything to surpass these hedges. In New England, we have nothing yet to take their place. They protect, soften and ornament the field they defend. The nearest approach to their beauty and use in this country, is given by the borders to the roads and lanes which I am endeavoring to save.

A traveller entering one of our New England villages, and, as he looks down upon it, observing the church and the school house surrounded by shady groves, lines of stately forest trees along all the great roads, so that the children going home at noon, may walk every where in the shade—the by-roads and lanes bordered with shrubbery and trees, like the hedges and hedge-rows of Old England, and the hills, round about, crowned with forests, would involuntarily say: How pleasant! how beautiful! and would be likely to think—How fortunate and happy the children, how thoughtful and prudent their fathers!

If we wish to dwell in a more genial climate, softer in winter, and shadier, cooler and moister in summer, in towns or villages more beautiful to the eye of taste, and more attractive and agreeable to the hand of industry, we must take care of the forests, and of these edges, relics of and substitutes for the forests, wherever they are to be found.

If you can find space for me, I should like, in another paper, to say a few words about the trees and other plants which we ought to take measures to retain or to reinstate.

Boston, April, 1867. G. B. E.

For the New England Farmer.

WHAT CAN BE DONE TO SAVE THE APPLE.

There are those who, believing in periodic states of health and sickness in the vegetable kingdom, hold that the apple is subject to a partial failure for a series of years, and then, from unseen causes, to a return to its former productiveness. But science throws too much light upon our ways for us to grope along thus blindly. Man has the same control over the culture of trees that he has over the culture of corn, wheat, or any other annual. All are subject to the same laws and affected by like causes. There is this difference, however. With animals, effect follows cause immediately and is readily seen; while those that affect the health of trees may be at work years before any thing is noticed by the unpracticed eye.

As trees are the growth of years, it requires more foresight and thought to cultivate them than it does the short-lived plants and vegetables. Now that the peach has failed, it is easy to find sufficient reasons for its failure; and may not the same general causes which wrought its destruction be now at work upon its more hardy companion, the apple, rendering it unprofitable and threatening for it a similar fate? I believe all the evils that have befallen the apple have come through the agency of man. Through the same agency must come the remedy. If ever an "ounce of preventive is worth a pound of cure," it is now in the incipient stages of a failure, before diseases develop into epidemics. So wide-spread already are the causes of the evils, that isolated individual effort can effect only partial cures. Radical and complete cure depends upon the combined action of the many. Still what the

individual can do, must by no means be neglected.

The causes of the present low condition of the apple tree may be classified under three heads: want of protection against climatic changes; of defence from insects, and poor and injudicious culture.

Protection from Climatic Changes.

This is the first point to be aimed it, for if it cannot be secured there is little probability of success, however carefully the trees may otherwise be treated. Florists may dwell upon the advantages, nay, the necessity of producing trees and plants adapted to the climate; and propagators of new varieties may claim they have achieved that desirable end, yet experience proves that without some protection, furnished either by nature or art, there is no certainty of a yield with any kind of fruit. Varieties of fruit that were once perfectly hardy, after a while fail to bear up under the rigors of our climate. When all the conditions of growth are perfect, I see no reason why fruit trees should not bear moderately every year. The very fact that fruit buds form and blossoms appear, proves there is a struggle to produce fruit; yet frequently recurring failures show conclusively that there is something radically wrong in their culture.

More than seventy years ago scientific men noticed changes in our climate, which are generally ascribed to the destruction of our forests. Their removal has opened the country to more intense action of the frost, wind and sun, causing more frequent changes in the weather, and greater extremes. The heat of summer extends further into autumn, which favors an untimely swelling of the fruit buds; the weather of modern winters is more inconstant than when the country was more densely wooded; the winds being more variable, snow is less permanent, and the ground is more exposed to the action of severe cold,—to alternate freezing and thawing. These extreme changes frequently kill the buds and injure the trees themselves. The cold of winter is prolonged later into the spring, and hence cold storms and high winds often occur while the trees are in blossom, and are, I think, the chief cause of failure of fruit in seasons of abundant bloom.

In Europe the blighting effects arising from the removal of the forests, and the benefits of their restoration, upon tender vegetation, especially upon fruit trees, have been fully demonstrated. When the wholesale destruction of the primitive forests of this country shall cease, or the waste places be again covered with trees to a degree that will restore in part or wholly the former equanimity of the climate, is a subject involving combined or governmental action, and beyond the scope of this article. The question now claiming our attention is, not what the government, but what the individual can do to ameliorate the effects of the climate upon his trees? It may be answered briefly, plant all fruit trees not in single exposed rows, but in large orchards, and surround them with belts of evergreens. Whoever is aware of the effect of forests in equalizing the temperature and in breaking the force of the winds, will at once see that the trees of a large orchard will materially protect each other, and that the benefits of two or three rows of evergreens must far exceed the labor of planting them and the land they occupy. In the cultivation of trees, valuable hints may always be derived from a close observation of nature. It is one of her laws to protect the roots with a layer of dead and decaying leaves, which tends to equalize the temperature of the ground, keeping it cool, moist and light in hot weather, and warmer in winter. The amount of moisture required by a tree in full foliage and laden with fruit, is immense. Can trees obtain their full supply that are trained to grow high, with nothing upon the ground to check the evaporation caused by the direct rays of the sun and the dry, hot, parching winds? often, too, with some cultivated crops drawing the nourishment the trees should have. Is it a mystery that the fruit of a tree thus situated withers and falls, frequently? that, while maturing one crop, it cannot properly prepare for another? And as the foundation of a fruit crop must be laid the year before, is it strange that its efforts result in weak buds, that weak buds should produce feeble blossoms, and that feeble blossoms blast, or develop inferior fruit?

Protection from Insects.

Without the aid of birds, the efforts of man in protecting his trees from these pests are of little avail. Trees collected in orchards present greater inducements for birds to build their nests than when standing singly; their prey will always be near them, and they will destroy more than if they traversed the whole farm for it. If mischievous boys and lawless gamesters were kept out, a numerous and efficient guard of these valuable allies might be relied upon. The occupants of poultry houses and coops located in the orchard will render no little assistance in the great work of protection from insects.

Good Culture.

By having all the fruit trees in orchards, the rest of the farm will be free to the mower, horse-rake, plough, &c.—a consideration of much importance in these days of farm machinery. Securely fenced, it will also be preserved from the browsing and other depredations of farm stock. Neither will one be obliged to make the circuit of the farm to do a little pruning, pick up the windfalls, or destroy the caterpillars. The site of an orchard need not be the smoothest and best part of the farm,—a hill side or a rocky piece is full as desirable a location.

I would have an orchard, when the trees are fully grown, occupy all the ground; yet not

so thickly as to crowd each other. It should be laid out with avenues at convenient distances for teams to pass. It implies thorough preparation of the soil before setting out the trees. Too much time and care cannot be given to the selection of trees, and it is best they should have been grown in nurseries in the vicinity, so that they be hardened both root and branch to the climate. The best specimens are cheapest in the end. Few farmers can afford to buy poor trees. If one is not fully competent to select trees, it will be money well invested to hire some experienced person to do it for him.

In training, the trees should be allowed to branch as low and limbs to hang as near the ground as they will. Low heads facilitate the picking the fruit, pruning, killing insects, and they shade the ground better during our hot summers. By the time the trees are beginning to bear, all plowing and cropping should cease. Whatever grows may be cut and piled under the trees or left to die and fall where it grows. This, with the leaves will make a mulch to prevent excessive evaporation during summer and keep the ground warmer in winter—thus giving a carpet such as nature spreads for the protection of our groves and forests. Plowing having ceased, the roots can take their natural position near the surface.

The growth of the trees should not be forced. Light and frequent applications of fertilizers, rather than heavy and occasional ones, are to be preferred. Ashes and mineral composts are preferable to animal and highly stimulating manures. Where only fruit is taken from the land, but little manure is required to maintain a moderate, even and hardy growth, which is all a tree can bear with safety, where it is to be tried by the rigors of New England winters.

Regarding the cultivation of trees in this light, notwithstanding recent failures, the management is plain and easy. It is only when we depart from the simple laws of nature, by attempting too much, or by failing to come up to her requirements, that labor and difficulties increase, and disappointments multiply. The apple is worthy of being considered an important part of our diet, and should be the pride of our Northern States; and on our rough, rocky lands, remote from market, should be one of our most reliable and profitable crops. And is it too much to hope that the same skill and intelligence that has brought this fruit to its present degree of perfection, can prevent its deterioration? N. S. T.

Lawrence, Mass., Feb., 1867.

Caledonia County, Vt.—The Fair of the Agricultural Society of this fine farming county, is to be held, as we are informed by its Secretary, I. W. Sanborn, Esq., at St. Johnsbury, Sept. 24, 25 and 26, 1867.

AGRICULTURAL ITEMS.

—The Chinese, it is said, use wooden, instead of earthen flower pots.

—Specimens of sponge prepared for beds and pillows, said to be equal to the best feathers, were lately exhibited to the New York Farmers' Club.

—The average yield of wheat in England, appears by official returns to be 29 bushels per acre; barley, nearly 38; oats, 46½.

—The great Illinois farmer, M. L. Sullivant, is preparing to set 400 miles of Osage Hedge on his new farm in Livingston county.

—In English markets, wheat raised in America and in various countries of Europe, commands a higher price than home-grown, while English grown barley bears the highest price of all.

—A Fon du Lac correspondent of the *Prairie Farmer* writes that men purchased sheep there, three years ago, at $4.50 to $5.00 each, and now are anxious to sell at $2.50 per head, and no sale.

—The bill appropriating $20,000 for the erection of a building for the accommodation of students of the Michigan Agricultural College was defeated in the lower house by a vote of 33 to 58.

—A correspondent of the *Western Rural* took a pailful of soft maple sap, and a pailful of hard maple, and boiled down the two carefully, and could not see any difference in quantity, but the soft maple sugar was the lightest colored.

—A man in Ohio bought a nice colt, but afterward discovered she was covered with blue lice. He applied coal oil, and the results were beyond his expectations. In 24 hours not a louse was left; ☞nor a filly, either.

—Hon. M. P. Wilder has discovered that pencil marks on strips of zinc for tree labels, which can be readily rubbed off when first written, grow more distinct and durable with age, and after a few years can be erased only by scraping.

—Instead of taking a chilled lamb to the house to warm it, a St. Albans, Vt., correspondent of the *Country Gentleman* says, "put half a dozen hot bricks in a bushel basket, cover over with fine straw, and put the lamb on the straw, and he will think it is summer in a few minutes."

—The California *Farmer* congratulates the people of that State upon the increase of flour and the decrease of gold in late exportations. Formerly nearly every steamer carried from one to two millions of bullion; on Monday last only about two thirds of a million, while the freight on flour is about $30,000 each trip.

—We are sorry to learn by a communication in the Iowa *Homestead* that for five or six years the canker worm has been extending its ravages in Monroe Co., Iowa. Last summer the writer visited Eddyville, in the Des Moines Valley, and says, "As far as the eye could stretch forth, up and down the river for miles, the trees were entirely stripped, and the twigs and limbs contained only

the skeletons of leaves shrouded with long ropes of the voracious gormandizer—the canker worm. It looked as if the messenger of death had wended his path along the stream and wreaked his vengeance upon that lovely valley."

—The Legislature of Indiana have adjourned without locating the Agricultural College, although the county of Hancock offered $300,000 to have it fixed at Greenfield, their county seat. The five years specified by Congress expires before the Legislature meets again, and it is said the State forfeits her $600,000 of the college fund.

—The Monthly Report of the Agricultural Department for February, gives a statement by which it appears that the annual yield of milk in the famous dairies of Ayrshire, Scotland, is 425 gallons per cow. The Hon. Zadock Pratt, of New York, in a dairy of 80 cows, reports the yield at 584 gallons.

—Ephraim Harmon, Saco, York County, Maine, writes to the New York Farmers' Club that twenty years ago, he cut fence posts from the tops of hackmatack trees in August, and they are still sound, though set in sand where naturally posts soon rot. Since then he has cut posts from the same kind of trees in winter, and they did not last five years.

—After the horse is nine years old, a wrinkle comes on the eyelid at the upper corner of the lower lid, and every year thereafter he has one well-defined wrinkle for each year over nine. If, for instance, a horse has three wrinkles, he is twelve; if four, he is thirteen, &c. So says an informant of the *Field and Fireside*.

—An English correspondent of the *Country Gentleman* says, "All our fatting cattle get four pounds per head daily of linseed cake, when first put up, increasing the quantity to eight or ten pounds to finish off; this in addition to plenty of roots. The very best linseed cake we get comes from New York, Boston, and Philadelphia, and costs here now $60 per ton.

—In some remarks on the spring care of ewes, Dr. Boynton of the *Mirror and Farmer*, "goes in" for feeding roots, and says, "If you haven't turnips, feed potatoes, and if you haven't these, buy some. If you haven't the money with which to buy, sell half your sheep for what you can get, and then get something on which to feed the other half, and you will make money by the operation."

—It is suggested by W. C. Strong and D. S. Dewey in the New York *Horticulturist*, that red cedar posts may protect grape vines trained around them from mildew. Col. Dewey says his vines trained on these posts, have been exempt from mildew and insects; and those growing nearest to the post have surpassed others in general healthfulness of appearance and productiveness.

—To save his face from the whisking of his cows' tails, while milking, a Herkimer county, N. Y., dairyman stretches a stout wire across the stable, immediately back of the cows. In the brush of each cow's tail he fastens a small iron ring. A hook upon the wire secures the offensive member out of the way of the milker. As soon as the cow is milked, the hook is removed from the ring, and the animal turned out of the stable.

—A dish-washing machine, of the size of a large tub, containing wire racks, &c., costing from $8.00 to $15.00, on castors, which will wash four dozen plates, or two or three dozen milk pans, in ten minutes, and requiring no wiping, and never breaking any, has excited the admiration of the members of the New York Farmers' Club. Now, girls, for white fingers and delicate hands while doing your own house work.

—The Farmers' Club, at Little Falls, N. Y., in a late discussion were nearly unanimous in the opinion that it does not pay to raise roots on a large scale for cattle feeding, at present prices of labor. Mr. Lewis whose opinion was not controverted, thought that early cut hay—grass, cut just as it was coming into flower and nicely cured,—was the best, as well as the cheapest, food for milch cows in winter.

—An experienced grape grower of Hartford, Ct., Col. Dewey, says in the *Horticulturist*, that he thinks many of the ills of vine growing are directly traceable to the restraint placed upon our free-growing native varieties. He asks, are not our trellises too procustean, and our methods of confinement too rigid? Do limb and spray have a fair chance at full natural development? He looks upon *motion* as a necessary element in healthy vegetation of all kinds.

EXTRACTS AND REPLIES.

RAISING CALVES AND COLTS.

Calves may be raised on skimmed milk cheaper and better than if fed with new milk—One good calf in the fall is worth more than two poor ones—No stock can be soiled so profitably as calves.

Do these propositions need argument or proof? Calves raised with new milk are fed from eight to twelve weeks or longer, and then entirely deprived of it. In the country, away from any market, skimmed milk is of far less value than the cream; consequently a calf can be fed on skimmed milk longer and in greater quantity, without increasing the expense, and thus he becomes larger and better. Feed regularly as to quantity, quality and time. Feed liberally, remembering that by skimming the milk it has been deprived of its greatest cash value, and some of its nutritive qualities. But don't skim the milk too closely; in the morning skim a small pan of milk that was drawn the night previous; at noon another small pan of the same milk, and at night take a pan of morning's milk. Three meals a day are better than two. The milk skimmed as above directed will be sweet, and though the greater part of the cream, and that which will make superior butter will be taken, it will not be deprived of all. As soon as the calf is old enough to eat, a little shorts, fine feed, or something of that kind, may be given dry, feeding as regularly with that as with the milk. Corn meal is not good in any form.

Keep the calf in the barn, out of the sun, on a floor well covered with sand or other absorbents,

to be removed as soon as wet. This will keep the calf from being lousy, and increase the compost heap rapidly. Feed green clover, corn, or anything else that is raised for cows, and better calves than are usually raised on new milk will be the result. If the skimmed milk of one cow is insufficient, sell one calf and give the milk of two cows to one calf, and it will be worth more than two if not well fed. Calves have been raised in this way with satisfactory success. Who will try it, and report? Don't be afraid to give a little milk after the calves are "old enough to wean." They must have something to eat at all times of life, and nothing is better suited to their natures than milk.

A few quarts of milk each day fed to a colt during the first winter of his life, will increase its size and consequently its value, much more than the cost of the milk. Those who are afraid to feed colts with grain, need not fear any injury from skimmed milk, which is better for the growth of the colt than grain. Will some one try this, and report? ZENAS.

New Hampshire, March, 1867.

TRANSPLANTING APPLE TREES.

In the weekly FARMER of March 30, a subscriber desires information in relation to setting an orchard this spring. By experience in this region we find the better way is to set the trees, if not quite large, three and a half or four feet apart in a well fenced nursery, first having the ground deeply tilled and suitably manured. Thus set, you will more easily take care of them and more successfully fight the different kinds of worms and insects. The trees will do much better there than in an orchard, exposed to injury from teams when tilling the land, and from the browsings of the stock when in pasture. When the trees have attained a proper size, have the holes well dug and prepared, then take them up carefully and set them out with as little exposure as is convenient, pruning the top and roots properly, and they will do much better, and come into bearing two or three years sooner.

I think the following the best kinds for this latitude, for home consumption or market: For winter,—Newton Pippin, Esopus Spitzenburg, Rhode Island Greening, Northern Spy, Tolman Sweeting and Sweet Greening. For fall use,—Twenty-ounce-apple, Fall Strawberry, Holland Pippin, Williams Favorite, and Fall and Winter Pippins. For summer use,—Red Astracan, German Bough, Tart Bough, Harvest, King Sweet, Large Sweet Bough. J. KING.

Eagle Bridge, N. Y., April, 1867.

LIST OF PEARS.

Having been called upon somewhat frequently to advise in the selection of sorts, and having had occasion to observe some of the errors which have been committed by the inexperienced, I beg leave to offer a few brief suggestions, which may benefit those inexperienced in fruit growing.

Most people grow too many sorts. I have been sorry to see persons of small grounds and smaller means, search through the entire catalogue to find some sort which they had not already planted, rather than set more than a single tree of the very best, well-known sorts, which will succeed well under all circumstances. Applying my remarks more directly to pears—a fruit most desirable for small homesteads, both on account of the less room which they occupy, and of the superiority of the fruit—it may be safely affirmed that eight of the best sorts will furnish a family with a better supply of fruit than twenty-five selected with reference to novelty and fancy. Doubtless our distinguished pomological friends, Messrs. Wilder, Hovey, and others are conferring a great benefit upon the public by the cultivation and exhibition of two hundred varieties, but we who grow for profit must remember that the benefit is to be derived from the cultivation of the *few* sorts which have proved themselves worthy of a place beside the Bartlett and the Louise Bonne de Jersey rather than the many which are entirely worthless for any other purpose than to fill up the tables at the annual exhibition.

Among the first requisites are a thrifty growth of wood, and early and constant bearing. Some sorts which have for a long period been considered standard by expert cultivators, have never given any satisfaction to people in general.

Of this class is the Winter Nelis, which will not make a good tree without extra cultivation; and the Dix and Urbaniste, which exhaust the patience of the novice by their tardiness in coming into bearing. Some have been obliged to walk by faith and not by sight from twenty to thirty years before discovering a single fruit upon their magnificent Dix trees.

Other sorts have been highly recommended for what they have done in certain localities, while in other places they have entirely failed. The Beurre Diel is an instance. But without occupying too much space in the already crowded columns of the FARMER, I beg leave to submit the following list of pears for general cultivation, on village homesteads, believing that the sorts recommended are such as will prove successful in the hands of those least acquainted with pear culture.

On Pear Stock:—Bartlett, Buffum, Sheldon, Paradise d'Automne, Beurre d'Anjou, Lawrence.

On Quince Stock:—Beurre Gifford, L. B. de Jersey, Duchess de Angouleme, Doyenne Boussouck, Vicar of Winkfield. G. H.

Worcester, Mass., March 25, 1867.

OATS, CORN AND LINSEED COMPARED.

Please inform me through the columns of the FARMER, what amount of nutriment is contained in a bushel of oats, Indian corn, cotton seed and linseed, and where linseed can be obtained, and at what price for 100 pounds?

Which of the four named seeds is the best feed for milch cows, for producing the greatest flow of milk, and which the best for calves and lambs?

J. D. BOYDEN.

Conway, Mass., March 18, 1867.

REMARKS.—According to statements made by different persons, in different countries, it is supposed that in 100 pounds of oats there is from 5 to 8 pounds of oil; in same amount of Indian corn there is 5 to 9 pounds, in linseed, 30 to 35 pounds. This is an index of their respective values, only in part, because their other nutritive qualities may be more favorable to one or the other.

Linseed cake may be purchased at the agricultural stores in Boston, at from $60 to $80 per ton. Linseed cake produces a great flow of milk. For calves and lambs we should prefer oats, carrots, beets, or other roots.

PULLING WOOL—TICKS—CATARRH

My sheep pull their wool out in strings. What is the remedy for that, and running at the nose? What is the best remedy for ticks?

West Campton, N. H., 1867. W.

REMARKS.—Pulling wool out may possibly be traced back to feeding too late on frost-bitten grass last fall, or it may be caused by ticks. If by the

latter, use the tobacco wash, or the common mercurial ointment; but either with great care.

For "running at the nose," treat the sheep much as you would yourself or your child for "a bad cold." In this case, an ounce of prevention is worth several pounds of cure. Mr. Morrill says, remove to a warm shelter and give some loosening food or purgative medicine, merely for the purpose of aiding nature in its efforts to remove the disease. Dr. Randall remarks, that after having tried a variety of experiments on this disease, he does nothing for ordinary cases of catarrh in his flock, except to take particular care that their quarters are kept comfortable, and that they have a regular supply of proper food.

A TIGHT CELLAR.

In your issue of to-day, you give me directions for making tight the bottom of my tank, which I expect to profit by, and for which I am very much obliged; but it must be as necessary to have the sides tight two or three feet high, as the bottom. I am told by those who have tried it, that liquid manure will soon destroy cement. Is this so, and if so, what shall I do? You say, spread the clay on one side, one inch deep, then pound. At least, I suppose you would have me spread it all over one inch deep before putting on more. D. L. T.

Marlboro', N. H., March 23, 1867.

REMARKS.—A great many barn cellars are cemented on the bottom, and last for a long time. If you wish to preserve liquids to the depth of two or three feet, you will probably be obliged to lay up regular brick or stone walls, and cement them. Our directions were plain, we think, about putting on the clay. You must begin somewhere, so we said begin on one side, and added, "and *go on* until you get the bottom covered," &c.

TO PREVENT SOWS DESTROYING THEIR YOUNG.

I have often thought of giving my method of taming the vicious sow, so as to save the pigs, and as it is about the time to begin operations, I will give it so as to be understood, if possible. I have never known it to fail. When the pigs are due, watch the sow; she will generally begin making her nest from 6 to 12 hours before you see any pigs, and you can be all ready. Have a basket at hand with some fine straw in it, large enough to hold all the pigs you are expecting, with a few straps that will buckle easily and tight; keep close watch, and if on the appearance of the pigs the mother seems disposed to destroy them, put them quickly in the basket, and keep them warm. Cover the basket with anything at hand, and keep them in hearing of the mother until all is over. Then let two men take the sow and lay her on her side, and strap her fore legs together and the hind legs in the same way; put a small cord in her mouth with a slip noose on the upper jaw, make it fast to a stake or anything within three or four inches of her nose. Tie the hind legs back, so she cannot kick to hurt the pigs, and the fore legs forward for the same reason. Raise them from the floor so she cannot turn over, and when all is ready and you see she cannot possibly hurt them, put the pigs with her and leave them 12 hours, and if she is not satisfied turn her over and give her another lesson. It cannot hurt the sow if the legs are not tied too tight. I have tried it with the most vicious sow I ever saw, and have never known a pig lost where it has been tried. If you think it worth printing I may try again on some other subject.

E. W. ORMSBEE.

East Montpelier, Vt., March, 1867.

REMARKS.—This process is new to us, but if managed carefully has no objections on the score of cruelty, although 12 hours seems to us a longer period than is necessary to keep the animal in one position.

We do not think that the tendency of sows to destroy their young grows out of a vicious disposition, but from an unhealthy or morbid condition of the system.

Prevention is better than cure. Let the sow have constant access to the ground; plenty of space in her feeding and sleeping room; a variety of food, including some meat or fresh fish; a little and but little, fine litter on the floor where the pigs are to be dropt.

Accustom her to being handled, petted a little, and to seeing different persons about the pen.

Feed moderately, and treat kindly in every respect, observing the other rules suggested, and sows will rarely destroy their young.

DISEASED POULTRY.

I wish to inquire through the FARMER, what is the probable cause of, and cure for, a disease which is attacking my hens? I have a flock of bright, handsome last spring pullets, a mixture of Bolton Grey and Dorking. Within a few weeks one after another have sickened and died. We first notice a drooping of the wings and general weak appearance, and a swelling on one side of the neck, or partly on the breast, so that the hen is inclined to carry her head on one side. As the disease progresses, the comb grows dark purple, almost black, and in trying to walk she pitches forward, sometimes falling on one side. We had a rooster in somewhat similar condition last summer, which recovered. They are fed with dough, corn, and occasionally a few scraps, pick up a good many seeds from hay, &c., having free access to all parts of the barn, and out of doors, when they choose to go; also, plenty of fresh water. If you, or any of your readers, can throw any light upon the subject, you will oblige a subscriber. H.

Framingham, Mass., March 29, 1867.

REMARKS.—In cases such as you describe, a gentleman gave a hen one grain of calomel in a bread pill, and four hours afterwards 15 grains of jalap, repeating the latter for four successive nights. The cure was perfect.

A GOOD YOKE OF OXEN.

I have a pair of oxen that traveled fifty-six miles out and back, in five and one-half days, loaded one way with one cord of hard wood.

ANDREW RUSSELL.

Townsend, Mass., March 28, 1867.

SALT FOR THE POTATO CROP.

I planted a few potatoes last spring, for an experiment. I soaked sawdust in strong brine and put as much in each hill as I could hold in one hand. In a few hills, with the soaked sawdust, I put from one-half to a teacupful of salt. I wished to find out if it would kill the potatoes. Where the sawdust was, without the addition of the salt, the potatoes grew very rank, the vines spread out

on the ground, as there was not strength to hold them up, but when straightened up, some were nearly as high as my head. The potatoes were very large. It took but a few hills for a bushel. Where the salt was added they were not as large in tops or bottoms. It was evident that there was too much salt.

No manure of any kind was used last spring; the year before there was a little spread on the land. My little girl put from ten to thirty sunflower seeds in a hill, but not one grew, except where she scattered them outside the hills. I am of the opinion that salt is a valuable manure for some kinds of plants. I intend trying it on potatoes more extensively this year. Would it not be as well to put clear salt in the hill?

I have a piece of land that I raised potatoes on last year, that is mellow, on which there was no manure except 200 pounds of plaster per acre. I wish to sow either to wheat or oats and seed down. Would salt be good for either of these crops, and how much per acre?

I take the FARMER, and read it, too, and I have seen but little said about salt as a manure. One of my neighbors that saw the result of my trial, says he shall try it on half an acre.

I have two reasons for not using barn manure. I have but little, and the piece of land is more than a mile off, all the way up hill. G. W. C.

Groton, N. H., 1867.

REMARKS.—We have no doubt but that a small quantity of clear salt in the hill would be useful to potatoes; but it should not come near the seed. We should recommend a handful of plaster to the hill, as far better than salt.

A mixture of salt and lime would be excellent for your wheat crop. It should be thoroughly mingled and sown broadcast in a powdered condition. An English farmer found the salt and lime very beneficial on the potato crop. One or two parts of lime to four or five of salt.

TO PREVENT A COW SUCKING HERSELF.

Please print in your next number of the FARMER the different remedies to prevent a cow from sucking herself, and oblige E. C. ROWELL.

Albany, Vt., March 31, 1867.

REMARKS.—We have used, both for cows and calves, a strip of stout leather—a piece of an old tug, or sole leather—with a row of projecting nails ground sharp, hung by a head-stall around the nose. We have seen a sort of straight jacket put upon the neck to prevent the turning of the head—sometimes a square frame, at others it is made by placing two ox bows on the neck and fastening them about a foot apart, one behind the other, by pieces of wood screwed on. M. C. Johnson, in *Country Gentleman*, says he puts an ordinary leather halter upon the cow's head; slips an iron ring on a surcingle and puts it around the body; then takes a round smooth stick of good timber, an inch and a half in diameter, and drives a staple in one end and ties the staple to the ring in the halter, and puts the other end of the stick between her fore legs, and through the ring in the surcingle. An Ohio correspondent of the same paper says that a hickory rod, some two feet long, nicely tapered to sharp points, and put through the cartilege of the nose in the same manner that rings are inserted, proves effectual. A light board, some eight inches by five, with a suitable notch in one edge, is sometimes hung upon the gristle of the nose.

But we believe that the nose strap, which should be lined on the inside after driving the nails through, will prove the simplest, least objectionable, and as efficient as any other cure for this bad habit, which we regard as a good reason for beefing any animal which indulges it.

USE OF PLASTER.

I wish to inquire through the NEW ENGLAND FARMER, what kind of soil plaster or gypsum is best adapted to, and what are its effects? If it has any permanent fertilizing qualities, or acts simply as a stimulant, that exhausts the soil, making it really poorer for the application?

Has it any value as a top-dressing on old, dry pastures, or grass land of intervales?

Will hops do well on intervales subject to freshet once or twice a year? SUBSCRIBER.

Lunenburg, Vt., 1867.

REMARKS.—Plaster is supposed to act as a direct food for *some* plants—but that it does enrich the soil, acting directly and by virtue of its own ingredients, we do not mean to assert. It must not be relied upon alone. It undoubtedly increases the green portion of plants more than it does the grain, and this adapts it to pastures. On some pastures a dressing of plaster will bring out a luxuriant growth of white clover, where scarcely a plant of that kind had been seen for years. This does not *imporerish* the pasture, but *enriches* it in three ways: 1, by filling the soil with roots which will eventually die there, and form a most valuable fertilizer; 2, it causes the surface to be covered with valuable herbage, about *nine-tenths* of which come from the air; 3, the stock kept on the pasture are fed abundantly, and consequently their droppings will be liberal, and tend greatly to enrich the soil.

Plaster is especially beneficial on the pea, bean, turnip and clover crops, and is appropriate to such lands as will best bring these plants. It acts well on most grass lands, and ought to be sown in damp or rainy weather, when it will adhere to the wet leaves.

We should think the hop would flourish on such lands as you speak of, if the water thoroughly passes off in April.

EXPERIMENTING.

I am exceedingly anxious that more farmers shall try experiments, the coming season, believing that, aside from Divine revelation, experiments are the source of much of our knowledge.

What means *can* be adopted to secure more experiments and a more general knowledge of them and their results? I wish you would give us an editorial upon the subject, and enlist your ablest correspondents in its discussion.

Would a system of *premiums* have a tendency to secure the result? If so, I will be one of 20 to pay a $100 premium to the town, or farmers' club, or lyceum, that secures the greatest number of the most accurate experiments in any agricultural department, the coming season, and especially in the making and use of manure.

Perhaps a more general and common discussion of the subject by the ablest pens, will secure the end. There are probably hundreds of farmers who have experimented with commercial manures the past season, who have not yet made public their experiments—either being afraid others will learn for *nothing* what has cost them money, labor, time and patience, or not having been successful, are afraid of being laughed at; or they "can not write for the papers," or some other equally unjustifiable reason. Are such men doing their duty to themselves or the public? Are we farmers at liberty to live for ourselves? Are we not continually receiving benefits from our neighbors, great good from a powerful government, made more and more powerful by internal improvements, and the increased knowledge and success of its people? And if any one can tell of anything that will tend more to these ends than judicious experiments, not only made but reported to the public, let him not hold his peace. LECTUM.

Vermont, April, 1867.

REMARKS.—The publishers of the NEW ENGLAND FARMER may be counted in for two shares in that premium, on the sole condition that the results be faithfully reported for the benefit of the farming community in general, by their publication in our columns.

SPECIAL MANURES.

I would like to know what manure is best or the most profitable to spread on grass land? Will superphosphate of lime pay? Stable manure, delivered, will cost about fourteen dollars per cord, and I do not think it pays at that price.

ETHELBERT WINSOR.

Smithfield, Greenville, R. I., April 5, 1867.

REMARKS.—Fourteen dollars per cord is a large price for manure. But it costs some of our market gardeners nearly or quite as much, and yet they apply from ten to twelve cords per acre, and find that it is poor policy to scrimp in manure. They use but little superphosphate, and that for special purposes. We must make and *save* all the manure we can from our barn and house—from our stock, muck-beds, slops and waste—no, there must be no such thing or word as waste—every thing must be saved and used. For top-dressing, composts are usually employed. Mr. Davis, of Framingham, Mass., whose farming operations were recently alluded to in the FARMER, finds that loam, of itself, as a top-dressing, increases the growth of grass, but he thinks the additional value of composting pays for the extra labor of putting a large quantity through the cattle yards and hog pens.

WILL PLASTER PAY?

I wish to inquire if it will pay to cart plaster, at nine dollars a ton, five miles to put on potatoes and corn, or sow on grass land? AARON BRIGHAM.

Holliston, Mass., March 30, 1867.

REMARKS.—Sometimes it will, and sometimes it will not; somewhere it will, and somewhere it will not. The operation of plaster is a mystery and a puzzle. We have witnessed most wonderful results from its use in Michigan; while, from its application in Massachusetts, we have looked in vain for proof that it "pays." Some think it operates better in dry seasons than in wet. Suppose you try a little—by which it is sometimes said we find out what a good deal means.

VERMONT WHEAT.

I did not reply to the inquiry of Mr. Parmenter, for the reason that others, and one in this county, Mr. Nutting, better qualified to do so than I am, have done it.

I enclose a specimen of wheat grown by me last season. I do not know any name for it. It is an Iowa variety and will stand up under heavy rains better than any variety I have ever sown.

My crop was 26½ bushels per acre, of 60 pounds by actual weight. It makes over 40 pounds of fine flour per bushel. I write that others may be encouraged to raise wheat in this section where it has been so long abandoned. ROYAL BURNHAM.

South Strafford, Vt., April 9, 1867.

REMARKS.—The berries of the specimen received were so large, plump and handsome, that we showed it to some of our seed-sellers, who were very much pleased with it, and wish to know if you have any to sell.

FROZEN TEATS—COWS FOR THE DAIRY—MANURE FOR CLAY LAND.

Will you or some of the readers of the FARMER, tell me what can be done with a cow that has frozen her teats so that the milk leaks out all the time; is there any help for it, or not?

Which is the best breed of cattle for the dairy, the Ayrshire or Alderney?

Which is the best for clay land,—to put the manure on top of the ground and harrow it in, or plow it in,—for grass? CURTIS WHEELER.

Fairfax, Vt., March 29, 1867.

REMARKS.—Make beef of the cow as fast as possible.

Your question as to what breed of cows is best for the dairy would require a somewhat extended reply to answer it fully. But, briefly, the Ayrshire would be better for a cheese dairy, and the Alderney, or a grade of Alderney, for butter. The cow for a good cheese dairy is not the best cow for a butter dairy. There are different qualities of milk. If Ayrshire cows are used for butter, one good Alderney to every six Ayrshires, would give the butter a decided improvement.

POTATO-RAISING ON LONG ISLAND, N. Y.

Your correspondent, "G. B.," Essex, Vt., asks for information as to the "best method of raising potatoes, preparing the seed," &c. Perhaps the following statement of the process adopted by the farmers in this section, though somewhat different from that usually practiced in New England, may afford him some practical hints.

The land is deeply plowed, and horse manure used, which forces the crop to early maturity, and hence it is less liable to rot. The largest potatoes are selected for seed, and if oblong, are cut in quarters, rejecting the small eyes of the seed end, so called, which produce small potatoes but do not add to the weight of the product, as was demonstrated to me on a potato field. The pieces are dropped 15 to 18 inches apart, growing no more than three or four stalks together, so that it is rather drills than hills. As to cultivating, it is very little more work, and the chances of growth much greater than overseeding in the hill. From the

large eye, or germ, comes the large potato, and the contrary with the smaller vines. Our farmers scout the "small potato" planting—as they do all small, mean seed, and all small animals. On this Island the potato business is reduced to a science; and a look at the fields in Flatbush and Flatlands, in June, will satisfy one that our farmers understand their business. Perhaps it would not be an exaggeration to say that without advantage as to soil or climate, they raise double the crop to the acre, as compared with the New England States.

H. Poor.

Brooklyn, Long Island, N. Y., April, 1867.

HAULING WOOD AND MUCK—IMPROVING A FARM.

Farmers have been very busy lumbering, and still a great deal of the timber on some farms must remain in the woods where it was prostrated last May by a fierce tornado. Since getting mine out I have hauled a lot of muck, and piled it in a long heap so as to have it ready to remove next summer, as it dries, to a convenient place near my cow stable, where I can use it behind my cattle to absorb the liquid droppings, and thus enlarge the manure heap and consequently increase the fertility of the farm. This I think one of the best and cheapest methods of enriching land, situated as we are, so far from market, where the freight on artificial manures makes them so costly. Ten years ago, I took possession of the farm I now occupy. During that time its productiveness has been increased one hundred per cent. without the use of any other means than those I could gather on the farm, without buying manure of any kind; and yet I see room for more improvement in the same direction. Still, when I plant carrots for the sake of having some to color the winter butter, which I do by feeding them to the cows instead of putting the juice in the cream, if I fail of harvesting nearly twice as many as W. W. Chenery did, I feel that I have not fed my land as well he has his imported cattle. I am practically convinced that it is easier and cheaper to raise ten bushels of carrots on one rod of land than on two, and seventy-five bushels of corn or oats on one acre than on two, and so on through the catalogue.

W. I. Simonds.

Roxbury, Vt., March 7, 1867.

SPRING WHEAT.

Please inform me through the columns of the Farmer, what kind of spring wheat I had best sow? A Subscriber.

Haverhill, Mass., April, 1867.

Remarks.—Those who have been sowing spring wheat will please reply. Mr. Wm. Allen, of North Hartland, Vt., prefers the White Flint; Mr. Rufus Nutting, of Randolph, Vt., says the most popular variety in his neighborhood is the Black Sea, and "H.," of Epping, N. H., recommends an "early variety."

"BONE FLOUR."

Having been a wee little journey in the mud, today, I met an old acquaintance who told me that he tried a barrel of the Boston "Bone Flour" that was sent into this vicinity last season, and thought so highly of it that he intends to try some more the coming season.

He said he prepared a piece for corn in the usual way, putting manure in the hill, from the barn, and then in every alternate two rows he put a decent handful of the bone, on top of the manure. When the corn tasselled out, he found by standing on the side of the field towards which the rows run, that the top of the corn presented an undulating or corrugated surface, every other two rows being as much as four inches higher than the intermediate ones. He did not harvest it separately, but thinks the bone did good.

He also sowed four quarts on one rod of run-out grass land; when he hayed the field in which it was, he did not notice any effect, but the aftermath, or rowen, was larger where the bone was, and there a good deal of clover had come in, though there was none in the rest of the field. I believe four quarts to the rod is about 20 bushels, or 6½ barrels to the acre. I am happy to be able to send you the above, believing that the publication of the *results* of experiments is too much neglected.

Rufus Nutting.

Randolph, Vt., April 9, 1867.

CULTIVATION OF POTATOES.

I never wrote a line for a newspaper in the world, but as I see by an article in your valuable paper, that a man's sanity would be called in question if he should plant small potatoes, I will give you my way of raising them. Last spring I planted two and a half acres of potatoes on old land that had been up three years, and the soil was dry and sandy. I plowed it three inches deeper than my neighbors do, and then I furrowed it out deep and put in each hill a small shovelful of old manure, or compost, as more than half of it was stuff that I carted into my yard. The rows were three feet and the hills two and a half feet apart. I put two potatoes in a hill, six inches asunder. My seed potatoes were about the size of hens' eggs, and I never use larger ones. As I market my potatoes, I plant very early. As soon as they are up, I run a cultivator through them, and then a double plow, after which a man can hoe an acre a day. In ten days I run the plow through them again, and it is less work to hoe than at first. I save time and get more potatoes by hoeing twice! I change my seed most every year. I think I got about one hundred bushels more by changing seed last year. The result of my crop was seven hundred and forty bushels of good nice potatoes, mostly Oronoes. My farm lays a mile from the foot of Sunapee Mountain. O. F. Cain.

Goshen, Sullivan Co., N. H., March, 1867.

GRAFTING WAX.

The directions given in a late Farmer for making grafting wax are precisely the same that I have practiced over 40 years. A few days since I took four pounds of rosin, two pounds of beeswax, and one pound of tallow, and after dividing each into pieces or lumps as small as walnuts, put the whole into a brass kettle—the tallow first—and set it on the stove over a slow fire, and as it melted I stirred all well together. I then poured it into a brass kettle containing two pails of cold water, and as soon as it was cool enough, I greased my hands well with tallow and divided the compound into eight balls. I then formed the balls into rolls twelve inches long, by constantly working and pulling until the mass was pliable and not lumpy, and have a fine specimen of wax. Spread the wax, when grafting, as thin as coarse brown paper on the end of the limb, making it air-tight around the scions. John King.

Eagle Bridge, N. Y., April, 1867.

TO PREVENT HENS EATING EGGS.

"A Subscriber" asks in the Farmer of March 30, a remedy "for his hens eating their eggs." If he will give his hens fresh meat twice a week, with a mixture of corn, oats, and buckwheat, and a lump of lime, pounded bone, oyster shells, or like, I think, from experience and observation, he will find the remedy. In the summer season hens usu-

ally roam the orchard and lots, and find insects, worms, &c. In the winter, deprived of their natural variety of food, they often resort to eating their eggs. Supply this variety, and this bad habit will be prevented, and perhaps cured. W. H. W.

South Windsor, Ct., April, 1867.

REMARKS.—"Another Subscriber" in East Randolph, Vt., writes: "Catch the hen, and with a sharp knife cut off the flinty point of the upper bill and the hen will not, or cannot, strike hard enough to break the shell." Rather severe on the biddy!

CULTURE OF HOPS.

I am thinking of setting out a hop yard, and would like to inquire:

1. What is the best kind of hops?
2. What distance ought they to be set between rows and hills?
3. How should they be manured.
4. How should they be poled, with long or short poles? J. F. D.

Bradford, N. H., 1867.

REMARKS.—The hop crop has greatly increased latterly. In 1850 the whole crop of the country was 3,497,029 pounds; and in 1860, 10,991,996 pounds! Next to New York, Vermont raises more hops than any other State, producing 638,677 pounds in 1860.

1. What is the best variety of hops, we do not know. They take their names from a variety of circumstances, such as the hanging of the fruit, the color of the *vine*, that is, the climbing stem. The grape-hop takes its name from the manner in which it hangs, the cluster being close together, like a bunch of grapes. Those named from the vine, are the green, the white and the red. Others are named from places where they have been successfully grown, and some from persons who have raised them from seed. The plant is usually raised from cuttings in the spring.

2. The plants are usually placed in hills, at the distance of five or six feet each way, and should be set as early in the spring as the season will permit.

3. The hop plant loves a rich loam; the whole yard should be manured and the manure well worked in, because the roots extend themselves in every direction, and often quite deep into the soil. No weeds should be allowed to grow, nor the surface to become hard.

In the English practice, the first year's poles are about six feet in length, but twelve feet poles are afterwards used.

FARMS AND FARMING IN WESTMINSTER, VT.

I cannot agree with you, and many others, in your advice to young men about commencing life in farming. Does the merchant get all his capital before he commences business? It is not so with our most successful men. If they can borrow money at six per cent. and let it at ten, it is what they are after. So with farming. I know there are some who are afraid to risk a dollar in anything, and they had better let farming alone and work for others. I know men, young men, who are worth from ten to fifteen thousand dollars, that has all been made within the same number of years, by farming alone, running in debt for all, with the exception of their stock; and that is the way, in my mind, to do. Buy a farm worth not less than ten thousand dollars, if you can get trusted as much. It will require no more to support your family, and but little more to keep your team than on a three thousand dollar farm.

I think the great mass of farmers mow their land too long without plowing. The farmers here, most of them, practice the following rotation: corn, oats, and clover, mowing but one year. The clover fits the ground in good shape for corn. We seldom miss of a good crop of corn after clover. The crops have doubled here within the last ten years, with those who have practiced this method.

Westminster, Vt., March, 1867. H. C.

REMARKS.—This is a plucky view of the case, and a good view, too, where the person who purchases is not "scared at trifles." A large farm can be managed proportionately cheaper than a small one, just as well as other business can. It all depends upon who has it. Advising young and inexperienced farmers to work for wages, is not advising them never to go into debt for a portion of the purchase of a farm.

A PROLIFIC BEAN.

In 1865 I raised from a single white bush bean, 659 in number, besides from 12 to 20 that got out of the pods, and were not counted. In 1866 I planted the 659 beans. The cut-worms took about one-fourth of them, as I judged, and yet from what was left, I gathered 19½ quarts of good nice white small beans; or 60,567 beans; there being 3106 in one quart, from actual count. If over "six hundred fold" is not pretty well for old Massachusetts, I should like to know who has done better.

Bernardston, Mass., Feb. 8, 1867. H. ALLBE.

INDUSTRIOUS HENS.

I have kept through the winter fifteen hens, and from the first day of January to the first day of April they laid 61 dozen eggs. Did the biddies do well and pay their keeping? D. F.

Harrisville, N. H., April 17, 1867.

CARE OF SHEEP AND LAMBS.

On publishing a few remarks of mine on the "Use and misuse of Bucks," in WEEKLY FARMER of Feb. 16, you suggest that by giving my manner of feeding and caring for my sheep and lambs, I might benefit your readers. I will therefore give it as follows:

I take my lambs from the sheep about the first of September. The sheep have the fall months to recruit in. When they come to the barn, and are put upon dry feed, I give them roots,—rutabagas I like best,—at least every other day, at the rate of one bushel to 50 sheep. Changing from green to entirely dry feed induces disease. I give a variety of feed; hay, straw, (poorly threshed) corn fodder, and a little oats, corn, or other grain, in meal. I give them salt and sulphur, using about one pound of sulphur to one bushel of salt, and have no trouble with ticks. About three weeks before lambing I give them cooked food—potatoes or turnips—with meal, mixed; or wet meal without roots, giving it quite wet. This feed will make milk for the lambs when they come.

When the sheep begin to lamb I put two or three in a small pen for a few days, and if the lambs need it, I give them a little cow's new milk until they get smart and strong, when I put them in the yard, leaving the small pen for others. I increase the wet feed after they lamb, and continue it until

they can get a good bite of grass. The great error is in stopping the feed when the sheep begin to leave the barn. They will then refuse hay and their milk will partly dry up; the lambs will get stunted before the grass is good, and they never fully recover from the effects of this neglect. A few dollars' worth of feed and attention at this point will pay ten-fold, besides the satisfaction of seeing thrifty growing lambs and hearty, healthy sheep. I have not lost a sheep by sickness or disease for the last five years.

If this hasty article will be of any benefit to your readers, I shall feel that I am only rendering a slight equivalent for the valuable information I am receiving weekly from your columns.

JONATHAN LAWRENCE.

St. Johnsbury, Vt., March 20, 1867.

FARMING, GOOD ROADS, &c.

Mr. Editor, you wish us to write for the FARMER; but you will not expect all of us to be John Johnstons, or Solon Robinsons. Yet we can write you something—of course we can—although our farms are not like those on the fertile soil of New York, or the more distant West. Certainly a large number of good farmers in this our county of Rockingham, can do this. Most any one of them might write an interesting volume on farming matter.

Farmers of New England have some drawbacks this year, as they are now selling their produce, such as potatoes, pork, meal, &c., at about half of last year's prices; but if they want flour, corn, woolen goods, and many other things, they find no corresponding reduction in prices. And again, high taxes are a thing likely to give the farmer some idea of the value of his country, in dollars and cents.

Good roads are a great advantage to the farmer in marketing his produce, &c. Our village friends might do much to improve the highways leading to their places. We have known such roads nearly impassable; sometimes quite so. Every consideration of interest, of duty and justice demands that our village friends should move in this matter, and see to it that the roads leading to their places be put in good condition, well drained and smoothly graded. If these soft arguments do not stir them up, we shall be under the necessity of trying what virtue there may be in harder ones.

Kensington, N. H., 1867. J. W. B.

ECONOMIZING ANIMAL MATTER.

Were you to travel among the dairy farms of this county you would occasionally find the carcases of the calves that have been killed, lying around the barn, there to remain until they become offensive, when they are removed to some out of the way place and left. Now, around every farmyard there is a quantity of the leavings of hay, straw, corn stalks, &c. Gather all these up and put in a pile, say from one to two feet deep. Here pile these same calf carcasses close together on the top, and when a sufficient number have accumulated, sprinkle well with unslaked lime—say for ten carcasses, one bushel of lime—and then cover lightly with any fine material handy, such as leached ashes, loam or muck, and then throw on top more of your coarse material; if you are to have more carcasses, flatten the top of the pile and put on more, and treat as before. If a sufficient quantity of lime be used, the whole mass will become, before any one not well acquainted with this mode of treatment would be aware of it, a heap of valuable manure, inoffensive to the senses. Where the carcasses are fed to the hogs the head, legs, back bone, &c., are always left. These can be treated in the same way, and instead of becoming a nuisance, as they do when removed to the field as the hogs leave them, prove a source of real profit.

The time occupied in doing this is but little. If the heap be allowed to remain through the summer, other waste flesh and bones may find their way to the pile. When the time comes to compare results between that which is manured with this, and that which is dressed with guano, phosphate, or bone dust, I think the experimenter will say that from the pile pays best, in proportion to cost.

Richmond, Vt., April 9, 1867. HENRIE.

LICE ON CATTLE.

Will the editor please inform us, through the FARMER, of a way to keep lice off of cattle, or kill them when they have got on them? F. G. G.

Sharon, April 6, 1867.

REMARKS.—Use the tobacco wash which is advertised in the FARMER, or the mercurial ointment. Both must be used with care. For some days after they are applied, the cattle should not be exposed to cold or wet. A little ashes rubbed in among the hair, or even dry garden loam, will disturb and lessen the vermin.

TO DESTROY TICKS ON SHEEP.

Will you, through the FARMER, give your readers the best cure for sheep that are troubled with ticks? G. C.

Orange, April 8, 1867.

REMARKS.—Dip them in the tobacco wash mentioned in another article in this paper. Or use mercurial ointment.

AGRICULTURAL ITEMS.

—In Philadelphia, peach and apricots trees were in full blossom on the 12th of April.

—The six woolen mills in Oregon last year worked up more than 1,000,000 lbs. of wool.

—It is probable that the coming wheat crop will be the largest ever grown on this continent.

—Mr. E. T. Miles, of Fitchburg, Mass., is the owner of a calf one year old that weighs 720 lbs.

—Three villages in Maine have this spring purchased from one nursery firm in that State three thousand dollars worth of trees.

—If a stable is kept clean, cows will go into it of their own accord. If dirty, they have to be driven in.

—There has been a cheese factory company formed in Brookfield, Vt., to operate with 250 cows, and another in Williamstown with 400 cows.

—Officers of the West Somerset, Me., Agricultural Society were elected March 2. S. W. Hapgood, President; A. W. Moon, Secretary and Treasurer. Fair to be held Oct. 16 and 17.

—The London *Agricultural Gazette*, says that in fifteen counties 11 persons have been imprisoned and 2134 fined for violations of laws and orders for the suppression of the cattle plague.

—It is estimated that there are thirty-two and one-half millions of sheep in the loyal twenty States and two Territories. It is supposed that the

annual number of lambs will be over twenty-four millions.

—Soaking cows' teats for a few minutes in a very strong decoction of white oak bark; also rubber rings that fit tight enough to stay on, are recommended by the New York Rural to prevent cows leaking their milk.

—The Maine *Farmer* says that Warren Percival, Esq., of Vassalboro', who has the best herd of pure Durhams in the State, gives special prominence to the development of the dairy qualities of this favorite breed.

—A correspondent of the *Mirror and Farmer*, has heard that chewing the centre seed-stalk of common plantain will effectually cure the hankering for tobacco, in those who wish to abandon the miserable habit of chewing.

—A correspondent of the *Country Gentleman* recommends boring an inch or half inch hole, say six inches deep, in the end of posts to be set in the ground and fill it with crude petroleum, and when the wood has absorbed one filling, to fill again and plug it up, when the post may be set in the ground.

—The *Tribune* reporter of the New York Farmers' Club, says that abortion in cows is confined to dairy sections where the calf sucks little or none, being killed or disposed of nearly as soon as born, and asks, Does not nature indignantly refuse to be a party in a transaction which cruelly disregards her instincts and longings?

—A correspondent of the *Country Gentleman*, in Champaign Co., Ill., says that the cattle, the lands and wealth generally of Central Illinois, are fast being gathered into the hands of a few rich men. The Alexanders, who bought Mr. Sullivant's farm of 23,000 acres, now own some 1600 head of fat cattle, and are buying up every "bunch" to be had of the smaller farmers.

—"Ramie" is a new Southern staple from Java. It will grow in the southern half of Georgia, will yield five crops a year of 800 pounds each; twenty-four hours after being cut it is laid out in long bands of pure white floss, ready to spin. It is planted like sugar cane; once planted, always is planted, grows twenty feet high, sells for twice the price of cotton, and is stronger and finer.

—Merchants find it necessary to employ travelling agents to solicit business. The Connecticut Board of Agriculture lately resolved, "That we recommend to the Agricultural Societies the practice of securing contributions of stock and manufactures by personal solicitations of breeders and manufacturers, and devoting some time previous to the days of the Fair to this object."

—Mr. J. Clay, of Buxton, Me., who recently visited the West, makes the following estimate for the Maine *Farmer* of the cost of a prairie farm. One hundred and sixty acres will cost at $5, the lowest estimate, $800. To fence this with posts and boards (and it must be fenced to save the crops) will cost $1 per rod, making for fencing $640. Then it will cost as much or more, to build a house and barn there as here, say $1500—making the whole cost $2940, before a single furrow of the tough sod is turned.

—Some six years ago, a correspondent of the *Maine Farmer* had one buck of coarse wool, and one of fine. The fine wool sheared 3¾ lbs., long wool 7 lbs. unwashed. Since that I have made another trial of fleeces, both washed, with this result: fine, 4¾ lbs.; long wool 5 lbs. The long wool was nice and clean, the fine wool I could not get clean. It cost me two dollars more to keep the fine wool buck, while the fine wool lambs were not worth as much as the others by about one dollar a head.

—A gentleman in Montreal whose interest in agriculture induced him to purchase a farm on one of the islands of the St. Lawrence, after three years experience, arrives at the following conclusion, as stated in a letter to the *Canada Farmer*,—a conclusion which has been forced on many other amateur farmers. He says, "I am well aware that to make a good farmer requires an amount of knowledge and application which people who have given the subject no attention little dream of. The profession of a farmer ought to rank higher in public estimation than it does; for surely the prosperity of our country is bound up with it."

—Mr. McCombie, an experienced grazier and feeder, near Edinburgh, says, any one who turns cattle out to grass that have been fed through the winter upon cake, corn, brewers' wash, grains, or potatoes, and kept in hot stables or close straw-yards, will be miserably disappointed in any expectation of profit. The mode of feeding has been unnatural, and before the animal begins to improve three months will have passed. A few weeks feeding of cake or corn may not absolutely ruin a beast for grazing; but the less artificial food they get during the winter, if afterwards to be grazed, the better; and when kept upon the food above specified for several months, they are perfectly unfit for grazing.

For the New England Farmer.

ROTATION OF CROPS.

A discussion by the Irasburg, Vt., Farmers' Club, March 25, 1867, reported by the Secretary, Z. E. Jameson, Esq.

The President remarked upon the importance of the subject. Z. E. Jameson said that when he commenced farming, he plowed up a piece of pasture land and put on, first, a crop of oats; second, a crop of oats, and third a crop of oats; each crop without manure, yielding forty bushels per acre. With the third crop, sowed grass seed. The fourth crop was sorrel, and then sorrel with weeds and poor grass until the ground was plowed again. This land has been occupied by hoed crops [How long?] and is to be seeded to grass this

year, with a better prospect of a good yield. Grass is our principal crop, therefore when it fails, plow, apply manure, and plant. The second year seed to grass with grain. Keep the ground up only two years, if it is land that can be hoed; if not, sow grain two years and seed with the second crop. Wm. Jameson plowed up a piece [How large?] of unproductive land and spread manure that cost $1.50. He had two crops of grain and has cut grass six years since. Grass is our best crop. With it we can keep stock, with stock make manure, and with manure we get good crops again. He plowed four acres, harrowed it and sowed oats and grass seed. Grass grew four feet high, and has continued to produce a good yield. Three years ago he plowed a third of an acre. Raised barley, potatoes and turnips. Second year he had twenty bushels of barley, and this year he got six loads, which he was quite sure was full two tons of dry hay; some of it reached to his forehead, over five feet high. He don't believe it pays to raise a lot of oats to sell, but feeds grain to stock. His farm is only sixty acres, and when he built an addition to his barns, his neighbors asked why he did so. He told them to fill with hay. His barns are now crowded. Still he intends to double the present yield. If his land was suitable, he would cultivate it all in rotation, but as some of it is wet and rather clayey, he top-dresses and keeps it in grass, and hoes the dryer portions.

Mr. Church said grass is the chief object, and we only plow to fit the land for the better production of this crop. If land is easily worked, and the sod readily decomposed, would only plow two years; first hoed crops, second oats. Apply the manure the first year before plowing. If the ground is heavy with a very firm sod, keep it up three years. First crop oats; second, corn or potatoes; third, oats and seed to grass. Mr. Webster said where the grass gets poor, he first plows and sows to oats; the second year plants and hoes; third year sows wheat, and stocks down with eight quarts herds grass, and six pounds clover per acre; and gets a good quality of hay and no sorrel. Applies manure to the hoed crops.

Mr. Tenney said our system of culture must vary according to the soil. We get money by selling beef, wool and butter, and to produce these our main reliance is hay. He commenced farming in 1840, and had had twenty-six year's experience. His course had been to take the poorest soil and break up in the spring,—never in the fall,—turning in the manure. Plants and cultivates well. Does not plow in the fall, for that would expose the manure to sun, wind and weather. Plows in the spring and sows with grain and grass seed. The hardest land to keep fertile is that which is sandy. It bears our heaviest timber. When that is removed, it yields bountiful crops, but is soon exhausted, and requires very liberal manuring. He was set against potatoes, and would as soon sell hay as potatoes. He was also opposed to the use of plaster (gypsum). It draws the fertility from the soil; makes a good crop, and leaves it more barren. He knew a piece of land about one mile from Montpelier, Vt., which produced very poor hay, that was heavily dressed with plaster five years. The first year there was a good crop; the second year a monstrous one—it could hardly be dried on the ground; third year, not quite as good; fourth year still less, and the fifth year hardly enough to wipe a scythe. This was some sixteen years ago. Since that time there have been liberal applications of manure, but it has not been brought back to its original fertility. Manure should be applied with a view to benefiting the crop and improving the land. Would stock down the second year. We should so manage as to raise two or three tons per acre of hay.

E. B. Hill remarked that he had tilled light soil and got the best result by applying manure near the surface. He once plowed in the manure on a piece and planted potatoes, but received no benefit whatever.

Mr. Clough would keep up moist land three years: first, oats; second, corn and potatoes; third, wheat. On half of one field spread the manure and plowed it in; on the other half he spread it on the furrows after plowing. All the crops were better during the whole rotation where the manure was put on top.

A. A. Webster practiced a rotation like that described by Mr. Clough.

For the New England Farmer.

FENCES.

A great deal has been written upon this subject, and many experiments have been made to test the utility of various materials for the purpose of enclosure. The amount of capital invested in fences is enormous, and he who will invent anything permanent, will be a public benefactor.

In this section of the country, rails are almost universally used for farm fences. White cedar is employed whenever it can be procured; but it is becoming scarce. Good cedar rails sell for $70 or $80 a thousand. Some farmers have enough to replenish their fences, but many who once had enough have sold nearly or quite all their timber.

Next to cedar, black ash is extensively used. This makes a good substitute, but it is not so durable. Rails were also formerly made of pine, but as the country became older, pine lumber increased in value, and was required for other purposes.

The great expense of keeping fences in repair has caused farmers to experiment upon a variety of trees and shrubs to supply the place of rails or other timber. Thorn, cedar, arbor vitæ, osage orange, and white willow, have all been tried, and each has found its admirers. I think if thorn is properly trimmed it will

make a good hedge, but it requires careful attention several years to make a fence that will be safe against cattle, and I should not be willing to risk it to protect a field against hogs.

Arbor Vitæ makes an excellent wind-break, and should be set at the north and west of barnyards and orchards, and when properly trimmed it makes a fine front fence, though it needs some light material to protect it for several years. Wire will answer.

I have had no experience with osage orange, but, judging from all reports, I believe it will not prove hardy enough for our Northern climate.

I now come to the white willow. In the *American Agriculturist* for 1863, No. 12, a long article appeared written by one of the Editors, extolling the willow in high terms for fencing. That paper being considered by many as reliable authority, the article was carefully read, and favorably received.

The next spring and summer an agent of E. S. Pike, of Painesville, Ohio, canvassed this county thoroughly, producing samples of *wonderful growth*, glowing handbills with cuts representing beautiful hedges, and recommendations from agricultural and other papers, and from distinguished men not a few, in favor of the white willow for farm fences. The thing took readily. Miles and miles of the cuttings were subscribed for. Farmers who can scarcely tolerate anything from *Yankeedom*, subscribed freely.

In the spring of 1865, the precious cuttings came. The rush to secure the game was great. The cuttings were tied up in bundles, a few of good size in each, but a large proportion of small twigs. Some misgivings were apparent in the countenances of purchasers, as one by one the precious bundles were taken away; each having the consolation of knowing that he was not alone, and that if he had actually bought willow twigs cut in our own swamps, there was little danger of being laughed at.

Thousands of dollars in gold or its equivalent, were taken from Prince Edwards county; and in other sections of Canada and of the United States large sums were paid for that which was expected to make a cheap and durable fence.

Before one season had passed, the scales began to fall, and now, after two summers, a clear vision discerns only a few *slender withes*, where a rank growth was anticipated. Two men, within my knowledge, have succeeded, by extra care and manuring, in producing a fair growth of willows; and there may be a few other exceptions to the general rule.

Such is the state of the white willow "hedges" at the present time, in this part of the country. Barnum has been styled, "The Prince of Humbugs," but the title no longer belongs to him, for the willow swindle is far ahead of any of his sharp practices.

L. VARNEY.

Bloomfield, C. W., Dec. 1, 1866.

For the New England Farmer.

BUTTER MAKING.

In connection with the ability to make good bread, one of the most valuable attainments, if not accomplishments, which any woman can possess, especially a farmer's wife, is the skill or knowledge how to make good butter. This is not an art that comes of itself. It is fully attained only by study and practice. But with the best skill and judgment, the first essential requisite is a good cow or cows; for, other things being equal, all cows will not make equally good butter. Having these, the next thing is their food; for it is certain that poor, sour swamp grass or hay will not make as rich milk and cream as sweet clover, timothy or red-top. And yet good cows and good feed are not all. To make good butter, there must be a good place to keep the milk and cream. This is a matter too much neglected or overlooked by many farmers; and it is to this fact, I apprehend, that is to be attributed much of the poor and ordinary butter found on many tables, and also in the market.

Go into our farm houses all over New England, and what, in too many cases, are the arrangements and conveniences for conducting this most delicate and important business? Too often the milk-room or pantry is very near the kitchen or leads out of it, so that all the disagreeable odors that escape from the various culinary processes which daily are carried on there are more or less absorbed by the milk and cream. And not only this, but frequently into the pantry, with the milk, are put, for future use, boiled cabbage and turnip, and onions, raw and cooked, codfish and halibut,—in fact, almost everything that has an agreeable as well as disagreeable odor. Besides, in too many instances, the filthy habit of smoking is indulged in by the male members of the household, and sometimes by the female also, so that the house from cellar to garret is more or less impregnated with this most nauseating perfume.

With such arrangements as these, it is utterly impossible for any one, with the best care and efforts, to make butter of the first quality. Even with the utmost attention, only an ordinary article can be produced. And it is no wonder to me that there is such a large amount of poor and second rate butter found in all our markets. It may seem sweet at first; but the fatal taint is there, and will make itself known long before it reaches its consumer. Hence it is no wonder that those who wish to obtain a nice article of butter are willing to pay the almost fabulous prices which we occasionally hear of being paid for a really nice and reliable article in the city market. To make the best of butter, there must be a room appropriated solely to this purpose, into which nothing that is offensive or unclean should ever be allowed to enter. Then, when all the other conditions are complied with, I

see no reason why a choice article of butter may not be made. And it is not only a matter of taste, but of pecuniary interest to every farmer to make the very best butter, for he will always find a ready and remunerating market for it. *

Tyngsboro', Mass., Jan. 30, 1867.

For the New England Farmer.

TREES MOST FIT FOR PLANTING,

TO TAKE THE PLACE OF THE LOST FORESTS.

The most valuable tree, all things considered, for this and almost every other purpose, is the rock maple. It is native to our climate; it is easily found and safely transplanted. It is a clean and graceful shade tree, very beautiful at all periods of its life; it is greatly and deservedly prized for the delicious syrup and sugar made from its juice; and it is of the highest value for its wood, as a material for the arts and for fuel.

This is the best season for transplanting it. On the edges, and in the openings of all the maple forests, vast numbers of the young plants may be found. Those of a size and shape suitable for planting where they are to remain, may not so easily be found; but a few can be found. For this purpose, small trees, not over twelve feet high, should be selected, and those are much to be preferred which are found growing on the outskirts of the wood, where they shall have been, for some years, freely exposed to the sun and wind.

A person looking forward to extensive plantations, and taking into view the wants of his friends and neighbors, will do well to remove a very large number of plants, two or three years old, to nursery rows, where they may gradually become hardened to abundant light and air. Many of the young trees in the nursery may die; and, of those which survive, only the most sightly and promising should be chosen for permanent planting. The best soil for the maple is a moist soil, with a clayey bottom, or one in which clay is a considerable ingredient. But it will grow on any soil.

Let any one who wants to see what a beautiful thing a young rock maple is, from earliest youth to the beginning of maturity, go out of Boston over the Western Avenue, any time from May to November, take the road to Brookline, and, on it, the first turn to the right, through Appleton Place, and, across the bridge, through Longwood to St. John's Church. He will need no words to recommend it. Any one who wants to see what a magnificent shade tree it becomes in its maturity, may drive from Bolton, over the hill, by what was formerly Sampson Wilder's, afterwards Stephen Higginton's, —now Mr. Forbush's—to the Old Common in Lancaster. On the hill, he will see a row a mile long of these grand old rock maples. While young, it is a singularly attractive, delicate, shapely tree. As it grows older, it shoots up and expands nobly and loftily. In its maturity, its broad arms extend horizontally, filling and satisfying the eye, and giving great depth of shade. At every age, the large, broad, full, rich leaf is very beautiful at all seasons, and, in autumn, its boundless varieties of the richest colors, all the yellows and all the reds, render it for many weeks the most resplendent ornament of the forests. No flower garden can vie with it.

Consider what a substitute a row of these trees along a farmer's field or a great highway, would be for trees that have been ruthlessly or carelessly or ignorantly destroyed. What a magnificent sight, from the centre of the village, will be a grove, say rather an orchard, of sugar maples, growing on the lower slope of a hill—a situation in which it is always likely to thrive.

For several years past maple sugar has been, in Boston market, more valuable than Havana or New Orleans,—for syrup it is vastly superior. An economical husbandman may soon substitute it for every variety of imported sugar, and gain by the substitution. All the stages of the preparation take place at a season of comparative leisure, when there is little else to be done on the farm.

Every one who is desirous that his great grandchildren shall, in their old age, enjoy the luxury of a wood fire,—and it is far the greatest luxury for the outer man, and not for the outer man alone, that is left,—must plant some acres with maples. No wood, except hickory, makes a pleasanter fire than old rock maple. But those grandchildren must be very rich or they will be unwilling to afford themselves any thing but the smaller limbs and the spray for fuel. The trunk and the larger branches and the root will be altogether too precious. As curled maple, shaded mable, landscape, clouded, and bird's-eye maple, there is no native wood which furnishes so fine a material for tables, chairs, bedsteads, wardrobes, bookcases, picture-frames, and almost every other kind of furniture; and few are so valuable for lasts, and a great variety of wooden ware.

Several other native maples are handsome and valuable trees. The white or red maple, remarkable for the silver color of the under surface of the finely cut leaves, is a rapid grower and a broad-headed, magnificent tree. The red maple nearly resembling the rock in the character of its wood, is well known for its fine autumn-colors, everywhere in New England. The Moose Wood is a graceful little tree, and the Mountain Maple is a pretty shrub. The Norway maple, a hardy species from the north of Europe, stands the sea breeze and the coldest winter better than any other tree of the family. It is admirably well suited to be planted in exposed situations along the New England coast. The Great Maple of Europe, commonly called Sycamore in England, is a noble tree, and grows to a great height, often reaching one hundred feet. It is hardy in this climate, and grows very rapidly. The Field

Maple of England, the common maple of the continent of Europe, is a smaller tree and probably less hardy, as it is not a native of the northern part of Great Britain. G. B. E.

Boston, April, 1867.

For the New England Farmer.

IMPROVEMENT OF STOCK.

Although for the last twenty years the improvement in all the departments of Agriculture has been rapid and persistent, yet no one thing to my mind has kept pace with the improvement which is especially observable here in New England, in all kinds of farm stock. Twenty years ago, the Alderney breed of cows which is adding so much to the wealth of the dairy interests of the country was, in this section, at least, unknown, and our Durhams and Devons were anything but generally disseminated. At that time, too, I can well remember that the report of a ten or eleven pound fleece of wool from a mature Merino buck was received with very grave doubts as to its truth, and we are sometimes disposed to smile at our early unbelief when we now see fleeces of from twenty to twenty-five pounds in weight quite common among a similar class of sheep. Although a large per cent. of this extra weight is produced by the greater length and thickness of the fleece and by the more complete covering of every part of the body, yet something must be attributed to the extra care and shelter from storms, now given. A recent examination of the flock of Eben Bridge, Esq., of Pomfret, Vt., who has been for many years one of the leading breeders of Merino sheep in Windson County, has abundantly satisfied me of the rapid improvement which the past few years has witnessed in this invaluable breed of sheep. Mr. Bridge has in his possession two of the best sire animals in the country, as their stock amply proves; and, I should judge, about one hundred and fifty ewes, which for compactness of fleece upon every part of the body, for robust constitutions and symmetry of form are very seldom equalled. At this day, the great point to be kept steadily in view by Merino sheep breeders is to increase the amount of pure wool in their flocks, and the time is not far distant when the flock which will cleanse the most wool per head, other things being equal, will take the front rank among the Merino sheep of the country. E. R. S.

Cornish, N. H., Feb. 18, 1867.

GRAPES IN MIDDLESEX CO., MASS.

From various reports and statements published in the lately issued "Transactions of the Middlesex, Mass., Agricultural Society," we glean a few facts in relation to the cultivation of Grapes.

In this county which is entitled to the credit of originating the Concord grape, it is estimated that more than fifty acres are devoted to grape culture.

SOIL.—The Committee on Vineyards say, cheap lands, not worth more than twenty dollars an acre, will answer every purpose of a vineyard. Redding, a great authority on wines, says that good, rich soil never produces even tolerable wines. It will be seen from one of the Concord statements, that one-half acre of waste pasture land, after being turned into a vineyard, was made to yield, from 356 vines, 3592 pounds of grapes, sufficient to bring the sum of $1,243.20. Two thousand cuttings are also raised at twelve cents apiece, making $240 additional. Total, $1,483.20, from half an acre of land.

In the statement of Thomas S. Hunt, the ground was cleared of brush, wood, and stone, and plowed ten inches deep; stable manure composted with swamp muck, at the rate of thirty cart loads to the acre, spread and covered with the harrow, and potatoes planted. The following spring manure as before. The ground is now ready for the vines, which are set in rows running east and west, eight feet apart and seven feet in the rows. The variety planted is the Concord.

MANURES.—After the vines are set, the committee say that ashes of wood, leached or unleached, are a powerful manure for the vine, and probably contain all that it requires. Mr. Derby of Lincoln used green manure from the hog pen. His berries, were large and juicy, and looked better for the market when freshly gathered than the others submitted for inspection. But in one week after they were received by the chairman of your committee, they began to shrink up and to taste insipid, and to-day, (Dec. 20) they have all fallen from the stem and shrunk up, nothing but their skins remaining. A box of the same kind of grapes (Concord), which were received at the same time from Mr. John B. Moore, of Concord, who used unleached ashes to fertilize his vines, still remain on their stems, and are plump. Their flavor is still good, although it has lost some of its sprightliness. In the opinion of the chairman of your committee, the difference in favor of the last mentioned grapes is attributed to the use of wood ashes for manure, instead of a gross, rich compost.

PLANTING AND PRUNING.—Mr. Hunt, of Concord, says, throw out the soil as deep as planted, and in circumference from three to six feet, according to size of plant, and with pick or bar loosen the subsoil ten inches deep; I now throw back a part of the soil, crowning it a little in the centre; upon this spread the roots evenly, covering them with the best soil. Some vineyardists of reputed experience recommend deep trenching and high manuring. They should also add a long purse well filled. For open culture in our vineyards, whether of large or small extent, it will not pay.

My method of training in the vineyard is

upon stakes, two to each vine. For the first two years (if one year old plants) I usually plant a single row of cuttings, turnips, carrots or beans; turn a furrow midway of the rows; into this I put fine compost; the ground is frequently stirred and the weeds kept down, the crop paying the expense of cultivation. For the third year the fruit will pay it.

Right Time to Cut Grass.—As there seems to be some question as to the proper time to cut grass for hay, I will give my opinion. Cut early, that is, as soon as the herdsgrass begins to blossom. I find by my records, I commenced cutting my grass the 16th of June in 1862, in 1863 the 15th of June—in 1864, the 14th—in 1865 the 14th of June—in 1866 the 25th of June. And now for the quality of the hay. I feed it to my milch cows, without any other feed; they would give milk until they calved, did I not dry them off. I dried off two cows the middle of January—one gave two quarts of milk, the other three, per day. They are to calve the 7th and 8th of February. I have milked the same cows until they calved, but think it injured them.

I feed my working oxen and fat cattle on the same kind of hay, and find it far superior to late cut hay. You get nearly as much weight as you would if you cut your grass later—that is, the first crop—if you cut the aftermath you will get one-third more. There is another advantage. A barn will hold from one-quarter to one-third more in weight—the cost of cutting the same, of making double, and the carting into the barn the same.—*Asa Hubbard, Middleton, Ct., in Co. Gentleman.*

NEW PUBLICATIONS.

Beet Root Sugar and Cultivation of the Beet. By E. B. Grant. Boston: Lee and Shepard. 1867. 158 pages. Price $1.25, bound.

We believe that American farmers can and should produce the wool used by our manufacturers; and we also believe that it is possible for us to raise our own sugar. The object of this little work is to demonstrate the advantage and feasibility of producing beet-sugar in this country. After a general history of the business in Europe, with observations upon the relative advantages of the Old and New World for its production, the author gives instruction for the choice of soil suitable for the cultivation of beets; the methods of preservation; of raising the seed; and of the preservation and use of the pulp. To collect the information embodied in this volume, the author visited the principal establishments in France and Germany, as well as the prairies of the West; and yet the publishers place the book in our hands without an index—an omission that seriously detracts from the value of this timely manual.

—It is said that 400 steam cultivators are at work in England, displacing 2500 horses.

CULTIVATION OF HOPS.

Our last article closed by directing that a covering of two good forkfuls of manure be put upon each hill in the autumn of the first season. Early in the spring of the second year, and every year thereafter, this manure should be removed, with the dirt from the main root, and all side shoots or surface runners, also the crown or top, trimmed off, as directed by Mr. Hansen in the article published in the Monthly Farmer for April, p. 176. The following illustrations show the whole process.

Fig. 4. *Plant Untrimmed.*

Fig. 5. *Plant Trimmed.*

Figure 4 represents the plant before trimming, and figure 5, the plant after having been trimmed. Mr. Hansen says these trimmings, or sets, if not needed for immediate planting or sale, may be buried a foot deep, kept clean during the summer, and used the next spring. This is called "grubbing," technically; and it is well to make it so literally, by destroying all the grubs that may be seen about the hills. There are two kinds of grub—one which makes a beetle, with a dark, hard head, and white body, with legs all on the fore part of the body. It is always found doubled up like a horse-shoe. The other is a caterpillar, which makes a butterfly. Both must be killed wherever found. After covering the root-stalk with fresh earth, the poles should be immediately set. The earth is less compact immediately after the frost leaves the ground than when it is thoroughly settled.

We must assume that the necessary poles were procured and prepared during the previous winter. Red cedar, tamarac, hemlock, spruce, pine, chestnut, ash, and almost any kind of wood will answer. In his contribution to Mr. Judd's Hop Culture, Mr. Ryder, Coventry, Ct., says, "get them of as uniform

size as possible, about sixteen feet in length, and from two to three inches in diameter. Sharpen the larger end, for a distance of about twelve inches, leaving a blunt point full one inch thick." Instead of using an iron bar to form the holes for the poles, Mr. Amos Turner, of Peru, Me., uses an implement, of which we copy the following cut and description from the same work.

Turner's Pod-auger for making Holes for Hop Poles.

Instead of using a crowbar, we make holes for the poles with a pod-auger. The blade is of steel, and an old mill-saw is just the thing to make it of. Cut a piece of saw-plate 18 inches long, 2½ inches wide at one end and 6 inches wide at the other. This is to be bent so that a section of it will be semi-circular. A shank of ¾ inch iron and one foot long is riveted to the larger end of the blade, and is furnished with a wooden handle in the same manner as a common auger. The engraving, Fig. 6, shows the shape of the implement. In using it, the auger is pressed into the soil by the foot, then, by turning it half-way round and lifting it, the dirt is brought out, and a hole made to receive the pole, with one-half the labor of using a crowbar.

FIG. 6.

The strongest and best poles should be placed in the outside rows, where they will be exposed to the force of the wind, and thus serve to protect weaker and smaller ones.

The poles should all be set by the time the vines are three inches in height. By setting the poles early, many vines will run up of themselves which otherwise would not, and thus save much time in tying. The poles should be about four feet apart at the top, as this distance prevents the vines from running together, and gives the sun a chance to strike all parts. When the vines are about three feet in length, commence to tie them. There will probably be from twenty-five to thirty vines in the hill, but only two must be saved for each pole. The surplus vines may be cut off, or twisted into a mass and placed upon the hill with a stone or clod upon them. In selecting the two vines for the pole do not take the largest nor the smallest, but those of medium size. In very rich ground it may be well to leave a couple of vines on the ground for future use, in case you should want them. In selecting the vines, take those that are nearest the centre of the hill or inside of the poles, for in cultivating there is then less danger of injuring them. Be very careful in handling and tying the vines, for they are easily broken. Various kinds of strings are used, but with any kind care must be used not to have them too tight. Mr. Jameson, of Irasburg, Vt., cuts the foot from an old stocking and placing the leg over the left wrist, unravels as needed. This is elastic and will give as the vine grows. Tie them just below the second bud, carrying them around the pole from left to right, or with the sun. As soon as the vines grow three or four feet beyond the place where they were tied, go to each vine and cut off all trailing arms to the height of five feet; then commence to cultivate the yard. With a hoe remove all weeds from the hills, loosening the dirt, as is customary in the hoeing of corn. Do not hill up, however, if you would save your vines from the effects of the grubs, which, through carelessness, often destroy whole yards. After this hoeing, apply slaked lime or good wood ashes, sprinkling it with the hand in sufficient quantity to whiten the ground around each hill. Examine the earth around the roots of the vines, and kill any grubs that may be discovered. It pays well to search thoroughly for these pests.

About the first week in July, when the grubs have finished work for the year, hoe and "hill up" the vines. After this, the yard will require but little attention. The hops will be in full bloom about the last of July or first of August; and as from this time the hops increase in size and the poles get more heavily laden, they require more or less attention, especially after a hard rain or heavy winds. Many poles will be blown over or broken, and it is necessary to set them again. If they are allowed to remain on the ground, the hops will mould, and, after a time, spoil. The vines should be unwound from the end of the broken pole, which should be sharpened and set again as before.

Directions, with illustrations, for picking and drying will be given next month.

SAMPLES OF FOREIGN WOOL.

Immediately upon the passage of the late wool tariff, a report was put in circulation that the law was to remain inoperative until an agent could be sent to all the foreign wool producing countries to collect specimens for the use of our custom house officials. It appears, however, from a letter from Mr. McCulloch, to Dr. Randall, that instead of contemplating such delay, instructions were issued immediately upon the passage of the Act, to the Collectors of customs at the several ports into which wool is imported, to classify and assess duty according to said Act, to the best of their power, in the absence of samples, and in no case to finally liquidate an entry, but hold them all in abeyance, until the samples could be procured. Hence in all cases the duty has

been assessed on all importations of wool since the Act went into effect, under its provisions. The Secretary also says that it is believed that the samples, arranged by Mr. Bond, and now awaiting the examination of the representatives of the National Associations of Wool Growers and Wool Manufacturers, represent all, or nearly all, the various descriptions of wool usually imported, and hence he does not deem it necessary to send an agent abroad at all, or certainly not until he sees some necessity for so doing.

Mr. Bond has prepared specimens of seventy different grades or classes of wool, which it would seem might enable the department to classify any new variety that is not expressly represented by either of these specimens. Twelve setts of these specimens have been prepared; one of which is in Washington, the others are still in Mr. Bond's office in Boston. We have examined them with much interest. Each specimen is put into a glass tube or jar, 3½ inches in diameter and some 13 inches long, which is plainly numbered and marked at each end. For convenience of reference and safety of preservation, Mr. Bond has devised a case of pigeon-holes, in which these specimens are deposited and arranged according to the class and grade to which they belong. The whole forms a museum of foreign wool which must be interesting to all who grow or manufacture this important staple.

We notice by the *Rural New Yorker* that Dr. Randall proposes that the case of samples now at Washington be sent to New York for the purpose of enabling the committee of the Wool Growers and Manufacturers who are to examine them to avail themselves of the facilities for investigation and comparison to be found there. As the duplicate cases are all here, we should have supposed that Boston instead of New York would have been selected by the committee for their place of meeting.

A GARDEN OF ACCLIMATION.

In the annual report of 1865, the Commissioner suggested that the government establish a garden of acclimation, where animals, as well as plants, could be acclimated and then distributed over the country.

A Little Valley, N. Y., correspondent highly approves of this suggestion, and states that he has for fifteen years been engaged in domesticating some of our native wild animals. He commenced with one of the noblest of our forest animals, the *Elk*, and the result has been a success, having bred and raised *forty* elk on his farm! He has also bred the *mink*. He "found that it required some experience or skill to manage the wild ones taken from the woods until they reared their first young; but with the second generation the difficulties were overcome, and it proves comparatively easy to raise them in large numbers.

This is exceedingly interesting. The races of beautiful and valuable animals that were once plenty among us ought not to be allowed to pass entirely away. Perhaps all of them might be made to prove profitable in a pecuniary point of view, as well as interesting.

The "*Notes of the Weather*," from nearly all parts of our country, show that the month of January, 1867, was the coldest, most boisterous, and with the heaviest fall of snow, of any month of January since that of 1857.

For the New England Farmer.

THE GARDEN.

A few hints to remind the readers of the FARMER of the appropriate garden work of the season may not be amiss. Little is gained in being in a hurry in planting in the open air, as there are but few kinds of vegetables which are not sensitive to the frosts and cold that may be expected the fore part of May in New England. Still there are a few hardy plants, the seeds of which may be sown regardless of light frosts. Taking up our subjects alphabetically, we begin with

Asparagus.—Dig in a dressing of manure, if not already done, and the shoots are not started; if so, a dressing of superphosphate of lime, lightly raked in is best. Clear off all rubbish. May will give you a fine supply. Cut 3 to 4 inches below the surface with a long, narrow knife, using care not to injure other shoots.

Beans.—If poles are not on hand, prepare them now. Nothing is gained by planting till settled warm weather. If you feel anxious to have a few early, start them on sods in a hot bed, or under glass. When the weather is settled, and ground warm, plant all varieties, reserving the Limas to the last, as they are the most tender.

Beets.—These will bear earlier planting. Sow in drills one foot apart, using plenty of seed, and thin them out for greens. The Early Bassino, for summer, and Long Blood, for winter, are good varieties.

Cabbage.—Seed may be sown in the open ground any time after it is warm. Plants started in the hot-bed should be transplanted

to the cold frame and from there into the open ground after frosts are past.

Carrots may be sowed in well prepared soil in drills one foot apart; the seed mixed with fine dry soil will be easier sown and more even. Early Horn and Long Orange are best.

Celery.—Transplant from the hot bed to make strong plants for summer use. Sow seed in warm, very rich soil, in drills six inches apart for main crop.

Cucumbers.—Plant only after settled warm weather, in hills four and a half feet apart; put a large shovelful of well-rotted fine manure in the hill; put in plenty of seed for the worms and bugs, and when the rough leaves are made, thin them out.

Horse Radish.—Dig for use, reserving the long, small ends of the roots for replanting—it has been the custom to reset the crowns, but a much nicer and better article is had by planting only smooth cuttings of the root, eight to ten inches long. Plant in rich, deep worked soil.

Lettuce.—Sow in hot bed and in the open ground for succession; transplant to give room to head.

Manure—for the garden should be well rotted and free from weeds and other seeds. Liquid manure is very valuable to forward all vegetables when applied judiciously.

Onions.—The seed of this esculent is usually the first put in after the frost is out of the ground. Set rareripes three inches apart in rows ten inches apart; let the soil be rich and well fined; keep loose and clean. Ashes are excellent for the crop.

Parsnip.—The seed starts slowly and may be sowed early, as light frosts do not injure them. Sow in fourteen-inch drills, in rich, deep, well worked soil.

Peas.—When the first planted are well up, plant for a succession; the dwarfs in drills one to two feet apart, according to growth. Taller growing sorts in double drills, four and a half to five feet apart; bush when up three or four inches.

Peppers.—Sow in hot-bed, boxes, or pots, in the house, to transplant after frosts have gone by into the open ground. Some kinds may be sown in the ground in eighteen-inch drills and thinned to eight inches; give a dressing of guano or hen manure, using care not to use too freely.

Radish.—Sow at intervals in light, sandy soil, and water with liquid manure to force a rapid growth. Sow in any vacant spot broadcast or in drills. To be crisp and good they should grow quick.

Rhubarb should have a good dressing of manure, forked in around the roots, and a headless barrel, surrounded with horse manure, placed over the crowns to force an early growth.

Seeds.—Test all by sprouting in wet moss or the like. In planting, cover the seed with fine soil, in proportion to the size of the seed; small seed requiring less covering, as a general thing, than large ones.

Small Fruits.—Currants, raspberries, blackberries, gooseberries, and strawberries should be pruned, dug about, manured, tied up, and new beds made.

Squash.—Plant only after frosts have passed, for they will not stand the cold. Plant early or dwarf sorts in hills, four feet apart; running sorts six to eight feet. No two varieties should be grown near together as they are very liable to mix.

Tomatoes.—Transplant, from the hot bed, or boxes in which they have been started, in May, after frosts have passed; place different varieties at a distance apart.

Sweet Herbs should be found in every garden. Divide roots of sage, lavender, thyme and rue. Sow seeds where the ground is warm, in drills, separated according to the growth of the plant.

Turnips.—Sow for summer use in light soil, fertilized with superphosphate.

Tools.—Last, though not least, always keep your tools in order, by cleaning after using and put them in their places under cover as soon as through using, and then no time is lost in hunting and cleaning rusty, lost tools.

W. H. WHITE.

South Windsor, Conn., April, 1867.

For the New England Farmer.

FOREST TREES FOR RESTORING LOST FORESTS.

For many situations, and for all seasons, a grove of trees of the pine family produces a finer effect than one of deciduous trees. As a screen it is more perfect. What can furnish a more effectual shield from the winds than a hedge of arbor vitæ? Or what can better protect a house standing too near a noisy or dusty street? It is eye-proof.

A person studious of comfort and of quiet, or of the appearance of quiet comfort,—and how can a home look beautiful which lacks the appearance of comfort?—will find inexhaustible resources among the pines. The white pine, when first planted, needs the protection of a fence or of other trees. But it grows very rapidly, and will continue to grow for centuries, till it towers far above all the other trees; for it is, or was, far the tallest tree native to New England. Its leaves are of a light, delicate green, a pleasant contrast to the brown of cultivated fields, and to the snow and bareness of winter.

Apparently and really more hardy, and a rapid grower, too, is the red pine, commonly called the Norway. It deserves to be better known and more cultivated. Growing by itself, which it does without difficulty, it forms a deep, rich mass, of darker color and hardier appearance than the white. But in all these qualities, it is surpassed by the Austrian pine,

which has been successfully introduced from Middle Europe.

The least valued of our own pines is the pitch pine; but for its picturesque beauty, its hardiness, and the fact that it thrives on sandy plains where no other pine succeeds, it deserves a better character. It approaches nearer than any other American tree, in its qualities and appearance, to the common pine of Europe, called, in England, the Scotch pine or Scotch fir. Every other pine is apt to be stiff and monotonous. The pitch pine is never so; it is always modest and unpretending, common but not vulgar, with a wild beauty and picturesqueness of its own. A low round hill covered with it, near the residence of the Hon. Judge Thomas, in Jamaica Plain, is one of the most agreeable objects in that pleasant neighborhood.

There are several varieties of the lofty Norway spruce,—the white fir of Norway, the red fir of Norway, and the weeping Norway spruce, —which are deservedly favorites with lovers of trees. They have the recommendation,—no small one with us, consistent republicans,—of being distinguished foreigners. Till lately, they had the additional charm of being rare. They deserve all the attention they have received. They have been introduced into the lawns of many of our rich men in the neighborhood of all our cities. If the spruces and firs of our own woods are less imposing, they have still great merits, and ought to receive more attention.

But there is another tree of the same family, which, in beauty and in utility as a screen, is unsurpassed and deserves special notice. It is the common hemlock, with spray and leaves finer than those of any other tree of our climate, or perhaps of any region of the earth. This gives the tree, while it is young, the appearance of the most exquisite delicacy. The leaves, like those of the other evergreens, grow constantly darker as they grow older, so that, in the spring, the close-set, bright yellow, minute, tender leaves, coming out from the opening buds, look like petals of a strange, exquisite flower, at the end of every twig.

The young trees are extremely well suited to form a hedge. They submit patiently to the pruning knife. The terminal branchlets are so small that they make a closer hedge than any other plant; and they may be so managed as to rise to any height desired.

As seen in a thick forest, the tree is often unsightly, and gives a false impression of its character. The lower branches, killed by absence of light, are extremely brittle, and break, not, like those of the true pines, close to the trunk, but at any point, giving it an extremely ragged appearance. None need be alarmed by this fact. For the first half century, the hemlock always has the appearance of extreme youth. One of them standing by itself, and allowed room to expand its branches on every side, will continue very handsome for a century.

The red cedar which flourishes upon poor, hard, rocky hills, which the other pines disdain, has a vast variety of character. Neglected, it is apt to become scraggy and ragged. But with a little pruning, often without it, it is as symmetrical as an Oriental cypress, which, at a little distance, it perfectly resembles.

The white cedar, a true cypress, is a tree of extreme beauty. Nothing can exceed the gracefulness of its top and upper branches. It is hardy and will live anywhere, but grows well only in very moist situations.

There are very many foreign trees of the pine family, which are introduced, cultivated, and highly prized by the lovers of trees. The larches, native and foreign, are hardy, and in Great Britain are extensively cultivated as a timber tree. For our purpose it is to be avoided, as it kills the bushes under it, and is particularly favorable to the growth of the grasses. If you are planting only for grandeur of appearance, in the future, plant the cedar of Lebanon. G. B. E.

Boston, April, 1867.

For the New England Farmer.

RAISING TURKEYS.

The following suggestions from an experience of fifteen years in managing turkeys are submitted to the readers of the NEW ENGLAND FARMER.

Laying.

Turkeys are shy in selecting a place to deposit their eggs; frequently going from one-half to three-fourths of a mile to find some thicket or bush-heap, and exposing their eggs to the depredations of skunks or crows! they having more skill than the owner in searching them out. It takes less time to provide safe places, and to train them to lay in these places, than to hunt up their "stolen nests," to say nothing of their exposure to the depredations of mischievous animals. Take some enclosure that can be spared during the time of laying and hatching, and fix hiding places, in which place a nest egg. Fasten the turkeys into these enclosures a part of the day for three or four days previous to laying. They will reconstruct the artificial nest, sitting a few minutes at each time for a day or two previous to laying. After they have accepted these nests and deposited the first egg, the work is done. I have had from three to eight nests on a long scaffold.

Sitting.

A turkey usually prepares her nest by scratching away the ground so as to form a scallop, which prevents any under circulation of air. In our nest-making we should be guided by the turkey's instincts and preferences. I usually underline with dry horse manure, so that the underside of the egg shall have the necessary warmth; over which I place

the nest, disturbed as little as possible. When the litter is nearly closed, the turkey will commence by sitting at night and a part of the day. The eggs should now be returned to the nest, as there is danger, if we wait until she sits steadily, of exposing the fresh eggs to a too sudden change of temperature for successful incubation.

The turkey is a most assiduous sitter,—sometimes remaining upon her nest, to the destruction of life. They should be occasionally taken from the nest and fed.

Care of the Young.

The turkey, when first hatched, is the most tender of domestic fowls. If they can be brought successfully through the first four weeks, the largest and most difficult part of the work is done. I have found cooping for the first five or six days, in some long coop, like a sheep rick, divided so as to give each turkey some four feet space, the most successful method. The young intermix. Each turkey is the common mother of all the young. When allowed to ramble they will herd together, so that three or four turkeys with 75 or 100 young will make no more labor than one with 15 or 20. During the first four weeks they should not be allowed to ramble until the dew is off, returning them to the coop nights, and keeping them in on rainy days.

Feeding.

The most natural food for turkeys is insects. Were it not for rain and dew they would be self-sustaining. The mother, unlike the hen, does not starve herself to feed her brood. She does not even divide; but takes all she wants. If she is not well fed she will ramble in pursuit of food beyond the strength of her young, and by neglecting the invigorating influence of frequent brooding, may lose the weaker ones. Having tried various kinds of food, the best success has been secured by using wheat bread soaked in sour milk for the first few days, then gradually changing to brown bread, and as they become larger and require more food, intermixing some wheat bran. As soon as insects become plenty, no other food is required, except in rainy, damp weather, which is more injurious to young turkeys than to high blood sheep. If unprotected, a heavy shower will frequently destroy a large share of a healthy brood. About the first of October, insects gradually diminish, the mornings begin to be cold and frosty, and some cheap and nutritious food is necessary; first, once a day; then twice, and after about the first of November, food should be constantly kept before them. I find boiled potato mashed fine, thickened with bean and corn meal, a cheap and good food, which should be made richer with meal, adding corn, as they near Thanksgiving and Christmas.

Statistics.

The following estimates bear upon the question whether rearing turkeys as above described, is or is not remunerative.

Five turkeys will, on an average, bring up 50 young, at an expense of $20 for labor, and $40 for feed or $1.20 per head, ...	$60 00
1865. Sold 51 turkeys, nearly 13½ lbs. each, .	$116 08
Cost of raising 51 turkeys, $1.20 each, ...	61 20
Net gain, ...	$54 88
1866. Sold 35 turkeys, a fraction over 15 lbs.; one gobbler, 21 lbs.; another, 22 lbs.; and another, 19 lbs.; 38 in all, ...	99 29
Cost of raising, at $1.20 each, ...	45 60
Net gain, ...	$53 69

I have on hand 8 hens, and two young gobblers,—one from first litter, 24 lbs.; from second litter, 19 lbs. Best young hen, 16 lbs.; best young pair, 40 lbs.; average four young hens, 14 lbs. 4 oz.; average four old hens, 15 lbs. 10 oz.; best old hen, 17 lbs.

Brandon, Vt., 1867. H. A. SUMNER.

MANAGEMENT OF LAMBS.

We continue our extracts from Dr. Randall's valuable articles in the *Rural New Yorker*, on "Raising Lambs," compiled from the answers of the leading sheep farmers of New York and New England, to questions which he submitted to them.

Docking and Castration.

Mr. Baker docks and castrates lambs at six to ten days old; Brown, Heyne, Rich and Saxton, at four weeks old; E. O. Clapp at three weeks, A. H. Clapp and Wright, at three or four weeks, but Clapp does not perform both operations at the same time; Elithorp docks at one or two weeks, and castrates at eight; Gregory docks at washing and castrates at shearing; Hammond docks at two weeks and castrates at four; the Marshalls dock and castrate at from six to fifteen days; Pitts, at from one to four weeks; Pottle, at from one to three weeks, according to the "strength and vitality" of the animal; Sanford, at two weeks; Wilcox, at one or two weeks, but does not perform the operations together. Our own views as to time, manner, appropriate weather, &c., are given in the Practical Shepherd.

Killing Ticks on Lambs.

All concur that dipping the lambs in a decoction of tobacco, strong enough to kill ticks, is the most effectual mode of removing these parasites from the flock. The time of our correspondents' dipping them varies from two or three days to two weeks after shearing the dams. We prefer the latter time, so that all the ticks on the ewes shall have had time to get (as they will) on the lambs.

Weaning Lambs.

Baker weans lambs at three months old, making it a point to do so "during the dark of the moon," as they will not bleat as much for their dams in dark as in light nights; Brown, the Clapps, Elithorp, Rich, Saxton and Wilcox, at four months; Hammond, from three and a half to four months; Heyne, from three

to four months; the Marshalls, from four to four and a half months; Pottle, from three to three and a half months; Sanford, five months; Wright, from four and a half to five months. We prefer four months, but might shorten or extend the time according to circumstances.

Tegs---Pasturage after Weaning.

A lamb is called a teg after weaning and thenceforth until it is shorn, at the usual time. As the kind of pasturage most suitable for tegs has been the subject of considerable discussion, and consequently doubt, in England, we put the following question to our correspondents: "Do you prefer to put tegs on pasture lands, or on the after-growth of meadows?" Baker prefers, if the season is wet and the feed good, to return them to the pasture they are used to; Brown, the Clapps, Elithorp, Hammond, the Marshalls, Pitts, Saxton and Wilcox, prefer the after-growth of meadows; Pottle prefers pasture if fresh and good; Rich, good pasture; Sanford would prefer good, fresh pasture, but not having it at that season, uses the after-growth of meadows; Wright thinks he would prefer good pastures if fed close and allowed to start up fresh; E. O. Clapp likes to put tegs on stubbles, (especially wheat stubbles,) where the land has been seeded down to grass; Pottle objects to this, because "the sharp ends of mown stubbles hurt them."

Our own experience was given in the Practical Shepherd thus:—"The moist, mild climate and constant rain in England, affect pastures very differently from the scorching and often very dry summers of the United States; and as a general thing I have found good, fresh rowen or after-math on meadows, or the new seeded grass in grain stubbles, better feed for lambs than rested pastures, unless the latter have been seeded the same or the previous year, and the grass on them is tender and fresh." Such is our continued experience, though it might not be so, nor do we feel at all confident it would be so, under the conditions named by Wright; but in our climate, and on heavily stocked farms, those conditions are seldom conveniently attainable.

There is unquestionably force in Pottle's objection to stubbles. Whether they ever produce sore mouth, as some believe, is very doubtful; they certainly have never affected our tegs in that way,—but they cut off wool from their legs and heads, and thus injure their appearance in points where "fashion" is very exacting.

AGRICULTURAL ITEMS.

—S. F. Dike, of Bath; Abner Coburn of Skowhegan; Lyndon Oak, of Garland; Isaiah Stetson, of Bangor; Wm. P. Wingate, of Bangor; Nathaniel Wilson, of Orono; Geo. P. Sewall, of Oldtown, have been appointed Trustees of the State Industrial College of Maine.

—A gentleman near Rochester, N. Y., has a plantation, some thirteen years old, of the veritable "Big Trees" of California. They are growing finely, but it seems a long time to wait two or three thousand years for the maturity of a tree.

—In opposition to the theory that butter made from the milk of cows kept on limestone soils will not keep well, a correspondent of the *Country Gentleman* cites a case in which a crock of butter made on the "Lime Rock Ridge" of Onondaga Co., N. Y., was sold for an extra price, after it was twenty-two months old.

—In an article on abortion in cows, Dr. Michener, in the *Germantown Telegraph* says: "You will always see a herd of cattle excited and distressed at the sight of an aborted calf in their midst, (and so is the aborter herself;) on the other hand where the embryo remained its full time, the whole herd seem to enjoy it from an instinct of their nature that all is right."

—Dr. Lenain states that carbolic acid vapor will kill flies, ants, lice, bugs, ticks, acari, musquitoes, aphides, butterflies, earwigs, wood lice, cockchafers, centipedes and other insects of this size, but it does not seem to act injuriously on animals larger than mice. It possesses also most wonderful properties as a disinfectant, and was used with encouraging results in treating the cattle plague in England.

—Z. A. Leland says in the *Country Gentleman*, that the main roots of the thistle run horizontally deep underground. When digging cellars, he has found them plenty three or four feet below the surface. Troublesome as the tops are, he regards the roots as good subsoilers, and the plant as a great ameliorator of the soil. He has seen nothing which restores the worn soil to the state it was in just after being cleared, like the Canada thistle.

Cost of Raising Stock.—The cost of raising calves and up to two years of age, was discussed at some length, at a meeting of the Herkimer county, N. Y., farmers. The general opinion was that the cost of raising stock for the first two years was about $50. The following is Mr. Lewis' estimate by items:—

Value of calf if slaughtered for hide or rennet	$1 50
Seven quarts of milk per day for a month, estimating cheese at 15c	7 20
One hundred pounds oil meal fed during summer	2 00
Whey fed during summer	1 00
Pasturage first season	2 00
Wintering first winter, hay at $12 per ton	10 00
Pasturage second summer	8 00
Hay second winter	18 00
Total	$49 70

Vermont State Fair.—The next Annual Fair of the Vermont State Agricultural Society will be held at Brattleboro', on September 10, 12 and 13.

Ladies' Department.

DOMESTIC ECONOMY;

OR

HOW TO MAKE HOME PLEASANT.

BY ANNE G. HALE.

[Entered according to Act of Congress, in the year 1866, by R. P. Eaton & Co., in the Clerk's Office of the District Court for the District of Massachusetts.]

CHAPTER V.

HOUSE PLANTS AND THEIR CULTURE.

OLEANDER.—This plant in its natural state inhabits the borders of rivers—hence its botanic name, *Nerium*. It is a species of laurel—is sometimes called the rose-laurel—and though both leaves and flowers are harmless to touch and smell, they are poisonous to the taste. It is a native of Southern Europe and Asia. In 1683 it was taken to England from the East Indies. It is grown in the gardens and shrubberies of Italy, Sicily and Greece, and cultivated in pots to adorn the grounds of chateaus in France and Spain. One species of the plant has been used in tanning; from another a blue dye, equal to indigo, has been procured. *N. splendens*, a variety of *N. odorum*, is the kind generally cultivated in greenhouses and conservatories in this country; but the atmosphere of the parlor agrees with it. Under good cultivation it bears very large and fragrant flowers of a bright pink color. Propagate it by cuttings. After a mature plant has bloomed, in the spring, cut back the shoots two or three joints, and from these pieces select the strongest, and place it in a bottle of water. Hang the bottle in the sunshine, till it is nearly filled with roots. Then get a pot five inches deep. Fill the first inch with pebbles, and the next with broken charcoal. Lay on this a mixture of loam, peat and leaf-mould in equal proportions. Sprinkle a little of this upon the charcoal. Then hold the young plant in the centre so that the tender roots are not injured, and add the soil: occasionally pressing it in with a trowel, or a potting stick, and then striking the pot to settle it. When the pot is filled, water the oleander, and if the soil be loosened around its collar, add more, and press it carefully to make it firm. Keep it in the shade, and water it every day, till it shows signs of growth. Then give it the sunshine. Wash it often, and give it liquid manure to hasten the flower-buds. Water it abundantly while blooming—indeed, from the first appearance of the flower-buds. If kept in the shade the blossoms will be pale—let it have all the sun possible after they begin to show color. Old nails mixed with the soil darken the color of the flowers, and make them grow large and full. Every spring get out all the old soil that you can with a trowel—a large iron spoon is better for this purpose—and fill in new soil like that named above. Do not injure the roots. The pot need not be changed for three years. Keep it in the shade out of doors, where worms cannot reach the pot nor trees drip upon the plant. Water it enough to keep the soil from drying till the middle of August, then give it more water and the sunshine, gradually. Toward the last of September it should be taken to the house, and in October it will be in bud and ready for the parlor. At Christmas it will be in bloom, and, if the plant is three years old or more, continue so until the middle of May, its large clusters of bright pink flowers delighting everybody with their beauty and fragrance.

OXALIS, comes from the Greek, and signifies *sour*;—the leaves of the plant have an acid taste; and of their expressed juice a chemical preparation is made, and sold under the name of Salts of Lemon, to take out iron-mould and ink-spots. It is a native of Brazil, Chili, and the Cape of Good Hope. There are also a few species growing wild in this country and in Great Britain. Old English herbalists call it "wood-sour tre-foil" (of which our word *wood-sorrel* is a corruption,) and "stubwort." Stubwort, because it covers the ground among the stubs in coppices when they are cut down. They also give it the names of "Allelnia," and "cuckoo's meat;" because it springs up and flowers with the singing of the cuckoo, at which time Easter-Alleluias, or anthems of rejoicing, were sung in church.

Seedlings of the oxalis are easily raised, but the plant is generally increased by offsets, which should be set in a pot drained with pebbles, in a soil of sandy peat and loam. October is the best time to start them, when the parent plant is prepared for the winter. The leaves will soon appear, followed by the flowers, (some species have pink, others yellow) and both leaves and flowers fold themselves up for sleep at the approach of night. During the winter, water liberally; but in the spring gradually withhold the supply till the leaves are dead, and keep the pot in a dark, cool place all summer. The oxalis is very pretty for a hanging pot.

ORANGE, has been considered under the head of LEMON.

PANSY.—This word is a corruption of the French *pensee*, thought. Louis XV. called Quesney, the founder of the economists, his "thinker," and caused him to wear three flowers of the *pensee* as his coat of arms. "There's pansies, that's for thought," says Ophelia, in Hamlet. Shakspeare also calls it "love-in-idleness," as in this extract from the "Mid Summer Night's Dream—

> "Yet marked I where the bolt of Cupid fell,—
> It fell upon a little western flower;
> Before milk-white, now purple with love's wound,
> And maidens call it love-in-idleness."

The plant is really a violet, and is sometimes called the *tri-colored* violet. It also bears the names herb-trinity, three-faces-under-a-hood, ladies'-de-

light, kit-run-about, and heart's-ease. Christiana's guide, in the Pilgrim's Progress, says of a shepherd-boy singing—"this boy leads a merrier life, and wears more of the herb called heart's-ease in his bosom, than he that is clothed in silk and velvet." The pansy is common in Great Britain, growing in the corn-fields and hedges—blooming all summer. Under the name of "ladies' delight," it early found its way to this country; but of late years it is seldom seen, except in old-fashioned and neglected gardens. In its place, hybrids, obtained by crossing the plant with the dark purple English violet, have met with great favor. Our handsomest varieties come from Switzerland, Germany, and France. England also furnishes some that are very fragrant and beautiful. They are of all shades of white, yellow and purple,—separate as well as united in the same flower. Pansies are most easily raised from division of the roots, but they are also propagated by seeds and cuttings. Start cuttings in sand, under a tumbler. Then set them in a pot well-drained with clinkers; the soil being rich loam, sand and decayed leaves, thoroughly mixed. Shade them a week, and water them very charily—just enough to keep them from getting dry. Seeds planted in the garden in the spring will afford cuttings or divisions in September for winter flowers,—which should be ready for the parlor by the last of October. Do not water them too much.

Petunia.—This word comes from Petun, the Brazilian name for tobacco, which the plant was at first thought to resemble. It is a native of South America, and was introduced to the notice of florists in 1823. This was the common white petunia. In 1830 a purplish-crimson species was discovered, and from the cultivation of these two have sprung all the varieties now known. The common single petunia is easily cultivated, and quite hardy; but the recent varieties, bearing enormously large and double flowers, though very beautiful and fragrant, are frail and extremely difficult to propagate. Common white or purple petunias are easily raised from seed, in the garden whence they may be transferred to the house. Set apart as many as you wish for winter as soon as they come up, and pinch off the flower-buds as fast as they appear. By the autumn these plants will be stout bushes, which can be potted, for flowering. About the middle of October get a five or six inch pot and drain it with a handful of pebbles. On this lay lightly an inch of rich garden mould, and then set your plant. When you take it up don't disturb the roots; and press the soil carefully around the ball when placing it in the pot. Water it to settle the soil, and make the surface smooth and even. Keep it in the shade a week. Then give it full sunshine. Water it occasionally with liquid manure, beside giving it warm water freely every day. If it grows too slender pinch off the flower-buds, and abate the water. Some varieties, even with this treatment, will require a frame for support. The petunia can also be easily raised from cuttings, by rooting them first in a glass of water placed in the sunshine, and then set in soil. The double, and larger kinds, are apt to decay if placed in water,—start those in sand under a glass.

Periwinkle.—This pretty little vine is of English origin. Its botanical name, Vinca, is from the Latin, and refers to its habits of twining, and binding its shoots about everything in its way. We sometimes call it running myrtle, because of the resemblance of its leaves to the broad-leaved myrtle. It is an evergreen; and may be transplanted from the garden in the autumn to a pot, or large sea-shell, filled with good loam, for a hanging flower. Water it once a fortnight with liquid manure and it will grow luxuriantly. By February it will be studded with bright blue blossoms, (—one variety bears white,—) and form a pretty contrast to the money-plant. It may be returned to the garden in May. Never let the soil get dry.

Pink.—*Dianthus Chinensis*, or China Pink, though frequently considered a garden flower is a very beautiful addition to the flower-stand. This was first cultivated in England in the early part of the last century, and from thence brought to this country. Sow the seed in the garden in the spring. It needs light, rich mould. In October pot a plant for the house—draining the pot with pebbles—and keep it shaded a fortnight, watering it freely the while—and then give it sunshine. Apply liquid manure to the soil once a month through the winter. The bright crimson velvet flowers will crowd each other unless you remove some of the buds, and the plant will go straggling over the pot if the stems are not tied up to rods. In the spring increase by layers in the same way as carnations—it is a surer and quicker way than by cuttings. The China Pink needs a great deal of water, but in small quantities.

Primrose.—This is so called because in England, its native place, it is often the first to open its flowers in the spring. One species, the auricula, has been already described. There is another, the polyanthus, which is very desirable for edgings of beds and borders; and which is worthy a place within doors for the sake of the profusion of flowers it will give in January, in return for good care and plenty of water and sunshine. Its clusters of yellow flowers, richly bordered with claret velvet, almost of themselves "make sunshine in a shady place." Give it the same treatment as the pansy.

Pyrethrum.—This is a species of chamomile, which it is sometimes called. Another name of the plant is *mountain-daisy;* that was given it because it resembles the genus pyrethrum, which includes many plants that are natives of high places, as the peak of Teneriffe, Caucasus, the Alps, and the Ural mountains. It also bears the name of *feverfew;* and is of the same order as the chrysanthemum, the daisy, and the aster. They all bear compound flowers,—which are among the easiest for cultivation,—readily changing from single to double in their flowering habits. But in order to perpetuate a double flowering plant the seeds per-

fected by the florets of the ray—as the bordering part of the blossm is called—should be always planted. Compound flowers are also propagated by cuttings, and by division of their roots. The pyrethrum is most generally increased by cuttings. Keep the piece in water a week. Then get a pot and fill it one-quarter with sherds, for drainage, and in a soil of sand, leaf-mould, loam and peat set the young plant. Shade it a week or two, and give it warm water daily. When it begins to grow place it in a sunny situation, but after the flowers have opened, remove it to the shade—they will thus retain their beauty and purity for a great length of time. The delicate green foliage and snow-white flower of the pyrethrum make it a very beautiful parlor plant. It is very suitable for ornamenting the dress, or the hair, and is an appropriate funeral flower.

ROSE.—We come now to the queen of flowers, as the rose has been acknowledged in all ages, throughout all lands. It derives its name from *rhos*, an ancient Celtic word meaning red, in allusion to its most frequent color. There are no roses in South America; but they are found in North America, and all over the Eastern continent. Asia is the garden of roses. The vale of Sharon, of whose roses Solomon sang, was by position and soil fitted to produce them in great perfection. And Virgil and Ovid have celebrated in their verses the roses of ancient Pæstum, (now Salerno, in Italy,) which were said to arrest the voyagers of the Mediterranean by their delicious odors. In fact, not a poet, nor a poetaster, whose words have reached the public ear, has ever felt that his work was complete until in rhyme or rmythm he had attempted to portray the charms of this matchless flower. The old mythology asserts that the red rose is indebted to Venus for her blushes. That the blood which flowed from her thorn-wounded feet, when running through the woods in her despair after the death of Adonis, lent the flower its color; and that the white rose sprang from the tears which she shed at that time. But Anacreon tells us that it was dyed with nectar by the gods when it was first formed;—he speaks of it also as the flower of Bacchus. The Turks believe that the rose sprang from the sweat of Mahomet, and they deem it a sacrilege to allow one of its petals to fall to the ground. And in Persia a festival is held in honor of the rose, which continues the whole time that it is in bloom. Not only there, but in Egypt, and Barbary, as well as in the nations of Southern Europe, the rose fills an important place at all festivals and entertainments, both in the way of decorations and in the gratification of the palate,—it is said that the Turks have several different ways of preparing it for sweet-meats.

The famous attar, or otto, of rose, which used to be dearer than gold, is made in Turkey; as also in Persia, and India. But many consider that now made in France superior in delicacy or perfume—the Turkish attar being a coarser, stronger odor. Only the damask rose, which takes its name from Damascus, where it formerly grew in great abundance, is used in making the attar. Among the East-Indians, the Chinese, Japanese, and the Persians, rose-water is used as cologne-water is by us—or, rather, more freely. One ceremony of salutation when a friend calls is the sprinkling of his garments with rose-water, by the host. Elegant China bottles, with stoppers of a peculiar form, provided for the purpose, are counted among the indispensable articles of housekeeping by families in good society. But we must return to our own country and our own regard for this beautiful and fragrant flower.

The brier-rose—wild-rose—dog-rose—it has all these appellations—takes its name from an old notion that its root and hips—seed vessels—would cure the bite of a mad dog. It is a true sister of all the exquisite roses of which there are over two thousand varieties, that beautify the gardens, the conservatories, and the parlors of all the civilized world; and makes the best stock for grafting the most superior kinds. It is useless to attempt to enumerate all that are considered suitable for house culture. Most of them that stand high in favor are varieties of the China, or Tea-scented rose, of which the old-fashioned monthly rose is a good representative. You may have them of all colors, from deep red to snow-white. The original tea-rose was brought to notice in 1812, and its descendants have the same wants, and are characterized by the same habits as their ancestor. They need frequent cleansing, or they will be infested by the red spider, thrips, mealy bug—in fact, all insects, to use the words of a distinguished florist, "from an earwig to a lady-bug." But the lady-bug is really a benefit to the rose, for it feeds upon the aphis and its eggs, and so helps to rid the plant of that pest. Rose-bushes should have well-drained pots, but they need not be very large ones. They should also have plenty of pure air and sunshine; though some are patient enough to look thriving, and benevolent enough to show their flowers where there is scarcely a ray of sunshine the whole year. Cuttings should be first rooted in sand, under a tumbler, and then transferred to a pot drained with sherds; having a soil of rich loam, sand, peat, and leaf-mould, together with a little fine charcoal, coarsely-mixed. Keep the young plant shaded a fortnight after this change, and water it sparingly—but never allow it to become dry. Then it will be strong enough for the sunshine. As the new branches are thrown out give it a little more water. When buds appear it must have all the sunlight possible until the roses open. But they will retain their beauty longer, when in full bloom, if protected from the noontide rays of the sun; all the rest of the day they should enjoy it, and have plenty of water. When the flowers have faded, cut their branches back half-way that they may throw out more blossoms. When the bush has ceased blooming cut back all the branches to within a few inches of the old wood, and abate the watering, and keep it in the shade—that it may

rest. After a few weeks repot it, with a ball of earth about its roots, and sink the pot in the garden mould till September. If buds appear, pinch them off. In September, raise the pot, and water it regularly every day, but never let the water stand about the roots, or let the soil appear soggy —stir it frequently. Keep it in a cool place, within doors, till the nights get chilly, then give it a sunny situation in the parlor. If the plant is strong, and thriving, and there are no fears of its getting pot-bound, the pot need not be changed oftener than once in four years; but the old soil should be replaced by new in the same way as for oleanders.

Salvia.—This genus is so called on account of the supposed healing qualities of most of its species, which have been found in nearly every country on the globe. In this country we have several exotics under cultivation; among them our common garden sage, which is used in cookery, as also in medicine. In China one variety of this is preferred to the tea-plant for making that beverage. *S. Mexicana* is usually styled a garden plant, but it is a very pretty ornament for the flower-stand, though its bright scarlet flowers are of rather short duration. This is the Mexican sage, often called only by its botanic name, *Salvia*. There is another species, S. splendens, which, as it also comes from Mexico, always bears the name of Mexican sage. They both require the same treatment, though differing in appearance. *S. splendens* may be known from its long spikes of flowers, having the calyx as well as the corolla of a bright-scarlet. *S. Mexicana* has a green calyx, and the scarlet corolla is more labiate than that of the other species. Transplant these from the garden, or take a large cutting and start its roots in sand, well-shaded, in September. Give it a soil of one-half loam and the remainder leaf-mould and sand to which a little fine charcoal may be added. Water it sparingly and keep it in the shade a week; then increase the water and give it a place in the house. About the middle of October it will be ready for the parlor; its elegant scarlet flowers will make a fine show for two months. Then set it in a cool, dry place till spring, when it should be set in the ground till the following autumn. Divide the root; when it gets very large, take new cuttings and let the old one remain in the garden.

Verbena.—This name is derived from the Celtic for *vervain*, a plant that grows freely along our country roads. It is in fact the same plant, with this exception—the wild vervain bears its flowers in long spikes, and the verbena of cultivation is a cluster-flowered species. The wild vervain was once called holy-herb. It grew on the Capitoline hill at Rome, and was considered sacred both by the Romans and Greeks, who used it at religious festivals, and also sent it by their ambassadors when making treaties of peace. It was much valued by the Druids of ancient Britain, and used by them in casting lots and foretelling future events. Their priests ordered the plant to be gathered "when the dogstar rose at such time as neither the sun nor the moon should be above the earth to see it." With this charge also, that "before they take up the herbe they bestow upon the ground where it groweth honey with the comb, in token of satisfaction and amends for the violence and wrong done in depriving her of so holy an herbe." It is said that the vervain is always found in the vicinity of towns and villages, that it never grows at a half mile's distance from houses, which circumstance has gained for it the name, "simpler's joy." The first really handsome verbena that was introduced for cultivation came from Buenos Ayres, in 1827. It was a beautiful plant, bearing scarlet flowers, and immediately became a favorite. Since then a large number have been brought to notice, and we have them of every color and shade except light blue. The verbena is raised with little care, but it grows the handsomer for good attention. Seedlings will bloom in three months from planting; the seed can be sown in the garden in May, and in the autumn a plant can be potted for the parlor. But a better way is to take cuttings in August,—July is none too early if the young plants are large enough,—and set as many as you choose in pots drained with clinkers, in a soil of loam, leaf-mould and sand. Water the plant slightly, to settle the soil, and then fill in the soil to the rim of the pot. Keep the plant in the shade a month. Pinch off the shoots, especially the central one, to make it grow bushy. Then set it in the sun, and give it liquid manure occasionally. Some persons prepare a fertilizer for verbenas by mixing—immediately before using it—half an ounce of the sulphate of ammonia with a gallon of water; and apply it to the soil once a week. This is also a good preparation for calceolarias and lantanas and ivies;—and it suits the fuschia and the heliotrope—giving to their foliage a peculiarly dark, green, healthy appearance.

Tie up the stalks to rods arranged at the edge of the pot, or train the plant to a trellis. Syringe it thoroughly, at least once a week, to keep off the aphides, after taking it to the flower stand, which should be in October. Give verbenas all the sun you can, and a plenty of air, but don't water them too much. The colors of the crimson and purple flowered varieties are deepened by mixing charcoal dust with the soil. In the spring cut verbenas half way back on every stem, and set these cuttings, as also the old roots, in a bed in the garden; and as the branches lengthen pin them to the soil,—to take root for more plants,—with old hairpins, or bits of bended wire. The verbena in many of its species has strong propensities for trailing, so it can be made a pretty hanging plant by allowing the branches to grow, and only pinching off the side shoots. All verbenas for the house should be placed in the pots they are to occupy through the winter in July or August.

—A law suit is pending in Chicago about five and a half inches of land.

HOUSEHOLD ECONOMY.

CONTRIBUTED FOR THE NEW ENGLAND FARMER.

Fried Potatoes.

Pare and cut the potatoes in thin slices over night, let them stand in cold water. In the morning, shake them in a dry towel, till perfectly drained. Then drop them into *very hot* fat, enough to float them. (The fat from beef suet is best.) Shake and turn them till brown, keeping them very hot. Dip out with a skimmer and salt them a little. If properly done they will be crisp and delicious.

Dressing for Fowls.

A sausage cut up with bread crumbs, wet with an egg and a little boiling water, will be found to be convenient and good.

Sponge Cake Pudding.

Stale sponge or other plain cake may be made into a nice pudding, by crumbing it into a little more than a pint of milk and two or three beaten eggs and baking it. Sauce—sugar and butter beaten together.

Orange Custard.

Remove the rinds, thick cells and seeds from four oranges. Add sugar and wine to the pulp till it is agreeable. Place a layer of sponge cake broken small on the bottom of a deep glass dish. Pour over a part of the orange, wine &c. Then another layer of cake, and the remainder of the fruit. Just before it is served, pour over the whole, *cold*, soft custard, made by stirring the beaten yolks and a little of the white of three eggs into a pint of boiling milk, with three table spoonfuls of white sugar. MARY.

Parsonsfield, Me., 1867

I find so much that is valuable in your department of family receipts, that it is but fair that I should contribute my share towards keeping it full. The great difficulty which we housekeepers on a moderate income have, is to get up nice but cheap dishes. One cannot help making good things, who has plenty of eggs, butter, sugar, &c., to draw upon; the trouble is to suit the family on an economical use of these staples. Such receipts then should, I think, have the place of honor in your columns.

Brown Bread Breakfast Cakes.

Mix up brown bread over night as usual, then in the morning instead of putting all into one loaf, put it into the "cast iron roll pan," now sold everywhere. Bake half to three-quarters of an hour, and you have a nice thing for breakfast, sure to be light and wholesome.

Indian Cakes.

Mix up Indian meal with water or milk, with or without an egg, into a batter, rather thicker than for griddle cakes, add a trifle of flour, salt well, and pour it into the cast iron roll pan, previously well heated; bake in a very hot oven. Success greatly depends on having the pan and oven hot enough. Wheat flour may be used in place of the meal.

Graham Cakes.

Take nice Graham flour, with plenty of salt, wet it with boiling water, into a thick dough, cut into rolls about an inch thick. Bake in a hot oven.

Troy Pudding.

The following receipt was published in your paper a long time ago; it is so valuable as to bear repetition, especially for the benefit of your many new subscribers:—

Two-thirds of a cup of pork or suet chopped fine, two-thirds cup of molasses, one cup of sour milk, one teaspoonful of saleratus, four cups of flour, three cups of any kind of berries or chopped apple. Steam three hours. Sauce—Butter, sugar, a little boiled cider, flour and water. Indian meal may be substituted for part of the flour with economy.

Cusk a la Creme.

If any housekeeper desires to make the best dish from fresh fish she ever saw or tasted, let her try the following:—

Take a fish weighing from two to three pounds, rub it well with salt and put it into a kettle with enough water to cover it. When it comes to a boil set it off where it will cool. When cool enough take out the bones. Take a pint of milk or cream, and boil a large onion and a piece of mace in it. Rub a quarter of a pound of butter into some flour, strain off the onion from the milk, and mix smoothly, adding a little pepper. Put it on the fire and stir until like a thick sauce. Lay the fish in a deep dish and pour the sauce over it. Have some crumbs ready to sift thickly over the top. Then bake from half to three-quarters of an hour.

GAVA.

THE
NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

NEW SERIES. Boston, July, 1867. VOL. I.---NO. 7.

R. P. EATON & CO., Publishers, Office, 34 Merchants' Row. MONTHLY. SIMON BROWN, S. FLETCHER, } Editors.

JULY.---THE HAY MONTH.

"I am a true laborer. I earn that I eat, get that I wear, owe no man hate, envy no man's happiness, glad with every man's good, and content with my own farm."—*Shakspeare.*

Let us earnestly strive to use the above language in sincerity, and we shall find each succeeding July a happier month than any of its predecessors.

What a month of fruition the abundant spring rains and vivifying suns of June have made it. How the farm has *filled up*—what a fullness there is all about the homestead. The fences are half hidden in the spires of the ripening red-top, the heads of herdsgrass and sweet blossoms of the red clover. You had a near neighbor a month ago, but now his dwelling is out of sight. Honeysuckles of varied hues and odors twine around the pillars of the piazza, or kindly climb over the lattice of the old porch to shut out the noonday sun. The world don't look half as large as it did a month ago, but a great deal more crowded.

How appropriately are all things ordered to aid us in our labors! The heat is now greatly increased, just at the moment when we are engaged in the great Hay Harvest,—and the showers that are usually so plentiful in June are in a measure held back, so that the farmer is able to cut the grass and rapidly prepare it for storing away in the barn.

But nature is still lavish in her bounties. The grass fields are shorn of their beauty, it is true, soon, however, to be clothed anew in "living green." While they are recuperating, other plants are coming into vigorous maturity. Besides the flowers of last month, there are now the candytuft, the catch-fly, columbines, egg-plants, marigold, marvel of Peru, roses and lilies. So the woods and groves produce new flowers, and the roadsides are ornamented with the blue bell and other gay blossoms to gladden the traveller's eye and heart.

Before the month closes, the rye will be yellow and ready for the sickle. The "oats will whiten apace, and quiver, each individual grain on its light stem, as they hang like rain-drops in the air." The wheat and barley assume a dull green, while their swelling ears bow before every breeze that blows over them.

Haying. now, is the work which calls for most of the farmer's time. Indeed, on many farms it commences in June. Many pieces of clover are ready for the scythe during the last week in June, and deteriorate essentially if not cut. But *hoeing* ought not to be neglected. It is better to suspend haying for a day or two to hoe the growing crops, than to allow weeds to take possession of the ground. It

requires but little labor, comparatively, to go over a field that was well plowed and harrowed, and where weeds and grass have not been allowed to spring up,—but where this work was slighted, and weeds have been allowed to take root, the labor of hoeing is slow, tedious and expensive, and the soil is robbed of a considerable portion of the nutriment that ought to have sustained the prime crop.

Harvesting the Small Grains. Do this before the grain is fully ripe. See article on another page of this number, on this subject.

CELERY. Set celery plants. Cover them with boards for a week to keep the sun off, and water freely.

CABBAGE. Set cabbage plants in every nook and corner for a late crop. They are excellent for the stock, and excellent for bipeds all through the winter, as "cold slaw."

It will not be too late to put in melons, and cucumbers for pickles early in this month. Wherever early crops have been taken off put in ruta bagas, and later in the month the flat turnip.

It will not be difficult to get *two* crops on a considerable portion of the ground occupied, and where such is the case, the profit will be more than doubled. The market gardeners get *four* crops,—spinach, peas, potatoes and cabbage. The peas are sowed the moment the spinach is off, then potatoes are planted between the rows of peas, and are fairly established by the time the peas fail. The pea vines are then cleared off and cabbage plants set in their place.

JULY will be a busy month to every good farmer,—but if he takes its work with some system, and does not attempt too much, he will find the work of haying interesting, and the month one of calm and rational enjoyment.

FRUIT PRESERVING HOUSE.

While sipping his wine one day with some philosophic friends, Dr. Franklin noticed that a fly which he had taken from his wine as he poured it out, and thrown carelessly upon the table, supposing it to be dead, was showing signs of life. Now as the life of a fly can be preserved during a "bottled-up" imprisonment of several years in a cold wine cellar; as other animals survive the stupor of hibernation, the Doctor and his friends began to philosophize on the probability of the discovery of some scientific means by which human life may in like manner be held in suspense for fifty or a hundred years. The Doctor suggested that it would be pleasant to take a nap of a century or so, and then be permitted to open one's eyes on the changes which might occur in the world during that length of time. We were reminded of this little incident in the Doctor's history by what we saw and heard at the formal opening, May 20th, of a building in Cambridge, recently erected by the Massachusetts Fruit Preserving Company. Science may be compelled to stop short of the Doctor's hopes, but it is certainly doing great things in the way of preserving fruits, vegetables, fresh meats, fish, &c. After examining the building and testing the preserved fruits, the president of the company, Dr. Geo. B. Loring, explained the principle on which the house is built,—being that perfected by Prof. Nyce of Cleveland, Ohio. The building is two stories high. The walls are some three feet thick. formed on the inside and outside with sheets of galvanized iron, and between them a packing of wood shavings. The second story is the ice room, separated from the fruit room by a floor of galvanized iron, made water tight, and so inclined as to allow the water from the ice to run off. The floor of the fruit room is also of galvanized iron, with shavings, &c., below, to prevent the entrance of moisture. Some patentable matter is spread upon the floor to absorb moisture and to affect the air. The object of the house is to secure uniform and proper coldness, dryness, purity, absence of light, and, if possible, the great agent of decomposition, the oxygen of the air.

Dr. Loring spoke with much confidence of the success of the new method, regarding it as of great value, not only for the preservation of domestic fruits, but of foreign fruits; and remarked that the construction of these houses would render the business of dealing in the latter, now so hazardous, quite safe and remunerative. Eggs, vegetables, and other products of the farm could be preserved with equal facility; and he had no doubt that by building these houses on a smaller scale, the use of cellars would be superseded to a great extent. The advantage of this would be that the fruit would not only be preserved for a much longer period, but would be kept in

much better condition, and thus the health of the community would be promoted.

One great objection to some fruit preservers has been the rapid decay of fruit on being exposed to the air. Mr. C. F. Hovey exhibited a collection of Hubbardston apples, taken from Mr. Converse's fruit house in Malden, six weeks ago, and since kept in a common cellar, as an evidence that the cold and dry atmosphere of the fruit houses, so thoroughly suspends decay that fruit will keep for a long time after being taken out of them.

We understand that the company propose to rent the building to farmers and market men who deal in fruits, berries, vegetables, fresh meats, fish, &c.

ILLINOIS INDUSTRIAL UNIVERSITY.

The Board of Trustees had a two days and a half session, at Champaign, commencing May 7. From a report of its doings in the *Prairie Farmer*, we learn that the Regent, Dr. J. M. Gregory, made a report on the organization, course of study, &c., which occupied over two hours in reading! It favors manual labor, which the writer of the report in the *Farmer* appears to disapprove; it is silent as to the admission of females, but as the law makes no distinction, it is thought they may be admitted as well as males; it provides for instruction in nearly all branches except law, medicine and theology; for a regular course of three years, and for instruction in optional studies. The students are to wear a prescribed uniform and be subject to a regular military drill. The Board ordered the sale of 180,000 acres of the land script at not less than 50c per acre; leaving 200,000 on hand. Improvements and alterations in the buildings and grounds to the amount of $7000 were ordered. The school is to be formally opened on the first Monday of March, 1868, but it is hoped that accommodations for some of the classes will be provided by the first of October ensuing. Executive and other committees were appointed, and the institution seems to be fairly under way.

Ringing Trees.—Mr. Joseph Davis, of Baldwinsville, Mass., writes to us that the trees which were made productive by this process, have been planted about thirty years, and although still thrifty and growing, never produced more than one peck of apples, and those so knurly and shriveled that he could not tell what kind they were, until he girdled them. After waiting thirty years for them to bear fruit, Mr. Davis agrees with Mr. Baker that, under the circumstances, the experiment was not only "allowable" but entirely justifiable.

COLIC IN HORSES.

We are informed by a gentleman who has given much attention to the diseases to which horses are liable, that the following remedy is a safe and effective one. It is certainly simple, and if administered with proper prudence, we are not aware that it would do any harm to the animal, if it did not effect a cure. We give it the more readily because it is a remedy always at hand, namely:—

Dissolve as much *salt* in a quart of pure water as may be required thoroughly to saturate the liquid, and drench the patient with one half of it. If symptoms of relief are not noticed in fifteen minutes or half an hour, give the remainder. He states that this remedy has proved entirely successful in very severe cases, where other more complicated medicines had failed.

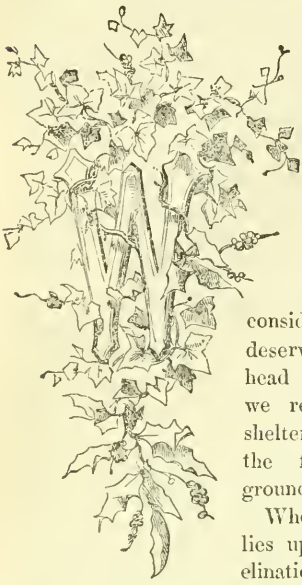
There are two kinds of colic, *flatulent colic*, and *spasmodic colic*. In the first, it is occasioned by the enlargement of the intestines by the food passing through the process of *fermentation*, instead of digestion. Gases are largely generated, and hence the distention and pain.

The *spasmodic colic*, which is accompanied by more excruciating pains than the former, is caused by a contraction of a portion of the small intestines. In either case, to force down various pungent and violent remedies is dangerous and cruel

Black Knot.—B. D. Walsh, Editor of the *Practical Entomologist*, in stating that black knot is nothing but an assemblage of minute funguses, says that the kind that infest the plum is a distinct species from that found on the cherry, and he cites several instances in proof, where trees of the plum were full of the knot, while cherry trees standing within a short distance were wholly unaffected, although the spores were liable to be blown in profusion from one tree to another. He also states that the black knot on the chokecherry and wild black cherry differs in species from the knot which attacks the cultivated cherry. —*Country Gentleman.*

FARMERS' GARDENS---No. V.

Shelter.



HERE it is desirable to raise early vegetables and the finer fruits, this is an important matter in most of the Northern States, and one that does not receive the consideration that it deserves. Under the head of "*Location*," we referred to the shelter afforded by the form of the ground.

Where a garden lies upon a gentle inclination to the South, if the ground above is occupied by an orchard or by forest trees, and especially by evergreens, little other shelter is needed. But such situations cannot always be obtained. Where the garden is upon level grounds, fences of boards, or stone walls are the shelter more commonly resorted to. But there are objections to cutting up the grounds around the home into small enclosures. It detracts much from their beauty, and the constant opening and shutting of gates and bars is attended with much inconvenience.

Belts of white pine, arbor vitæ, or Norway Spruce planted in double or triple rows on the northerly and easterly side of gardens, furnish a better protection, and at the same time add much more to the beauty of the ground. Where it is desired to raise *early* vegetables or the finer fruits, some such shelter is absolutely necessary. Vines and the more delicate pears are often greatly injured and even ruined by rain storms, accompanied by northeast winds. A fence five or six feet high, or an evergreen hedge, will generally save them Under such a shelter, beds for early vegetables may be arranged, and next to them the more tender varieties of pears may be planted. In such situations, the ground will not freeze as deeply in the winter, and will be in a condition to be worked several days earlier than in open ground.

In such sheltered situations the climate is greatly modified, and is actually found to be several degrees warmer on cold and windy days than in unsheltered places.

One of the most remarkable instances of amelioration of climate produced by artificial shelter is found in the garden of Mr. Tudor of Nahant. This is a rocky promontory projecting from the coast of Lynn and Massachusetts Bay. It consists chiefly of ledges, or rock piled upon rock; is not more than half a mile wide, and is exposed to the full sweep of the easterly winds, which bring the salt spray over the surface. The soil is thin, and with such fierce visitations of wind and salt water, the vegetation is meagre and only of the coarsest kind. Yet, in such a situation, science and labor have triumphed over the natural obstacles, and made the almost barren rocks to blossom as the rose! Corn, and waving grain, trees of various climes, fruits, flowers, shrubbery and rich lawns now meet the eye, where only desolation held sway but a few years before.

Mr. Tudor found that trees, even those of a hardy character, would not grow, or scarcely live, swept and twisted by the winds, and coated by the salt spray, and he set himself to protect them. The first step was to ameliorate the climate. Cold winds, surcharged with acrid salts must be kept out, while soft suns and gentle airs must be admitted to the plants, and he has so far changed the climate of the locality, as to enable him to rear tender plants, and to produce fruits scarcely attainable in sheltered spots in the interior. Around one garden he erected fences from ten to fifteen feet high of common lathes, nailed to strong cross pieces, leaving interstices about two inches wide between them. Around another garden the fence is of brick; the lower five or six feet is close, and the upper portion full of holes about two inches square. These fences so break and sift the winds as to deprive them of all power of either straining the trees, or conveying the salt spray to their foliage. At the same time the temperature is so changed, that several degrees of difference may be noticed between the inside and outside of the enclosure. In a cold day, there is a genial, soft atmosphere in the garden, while out of it, November winds may howl along the coast with icy breath. Under this change of temperature,

Mr. Tudor has succeeded in clothing this part of the promontory with rich varieties of plants. We saw pear trees only transplanted four years, loaded with fruit. The Northern Spy fruited in perfection. There were tender raspberries, and nearly all the fruits found in our gardens.

Mr. Tudor has set 10,000 trees among the rocks on the handful of earth he could come at, where he desired to plant, so that now the currents of wind being broken, and evaporation in a measure retarded, vegetation will spring into life spontaneously, and trees of a less hardy character than those commenced with, will succeed. His example is widely felt, and other cultivators take the hint from his operations, and by means of fences and shubbery are enabled to rear plants which it would be otherwise impossible to do.

On Cape Ann,—another promontory still farther North than Nahant,—is a granite wall fifteen feet high, erected by the owner of a quarry, for the purpose of protecting his garden from the east wind.

The market gardeners in Belmont, West Cambridge, and other towns in the vicinity of Boston, erect light board fences on the northerly and easterly sides of their grounds, and against them arrange long rows of hot beds, covered with glass, and in addition straw matting during the night. Here, with the assistance of horse manure from the city stables, they raise lettuce, radishes, early cabbages, turnips, beets, cucumbers and tomatoes, and large quantities of similar plants, which, at the proper season, are either transplanted into their own fields, or sold to gentlemen in the vicinity. Indeed, quite a profitable trade has recently sprung up between these gardeners and the people from the country, who resort to them for early plants to be transplanted into their own gardens.

The proof of the benefit of shelter to the garden in our climate, meets one on every hand. There are few good grapes that ripen in New England on unprotected grounds, but sheltered by a wall or hedge, many fine grapes will attain perfection. One of the finest nurseries within our knowledge is protected by a thick belt of forest trees, and here the finest pears yield their fruit in perfection, which will rarely pay for cultivation in unsheltered localities. For the early maturity of fruits, so that they may escape the autumnal frosts, high culture and heavy manuring cannot take the place of shelter. These, in the culture of grapes and pears, will produce a luxuriant growth of wood, and large, plump fruit, but the wood is so filled with sap, that the maturing of the fruit is rather retarded than hastened by it. For this purpose, the atmosphere needs to be *cultivated* rather than the soil, and this can only be effected by shelter, which protects the fruits from the searching winds, and surrounds them with a warmer and more uniform temperature.

We formérly attempted to produce early maturity by high culture, but experience has proved its futility. This will give us fine fruits where the season is long enough, but will not insure their early maturity, which is the great desideratum in the northern States, especially with respect to those fruits and plants that have been brought to us from regions where the climate is warmer and the seasons are longer.

For the New England Farmer.

NOXIOUS ANIMALS, INCLUDING INSECTS.---NO. IV.

Cut Worms.

We resume our notice of noxious insects with some remarks concerning cut worms, the *Agrotididæ* of entomologists. Of these, according to Walsh, there are two genera, *Agrotis* and *Hadena*. Those which are commonly known as Cut Worms by the farmers and gardeners of New England, are the larvæ of a few species of the genus *Agrotis*, similar in appearance and habits, described by Harris as "thick, greasy-looking caterpillars, from 1¼ inches to 2 inches in length, when fully grown, of a dark, ashen-gray color, with a brown head, a blackish horny spot on the top of the first and last rings, a pale stripe along the back, and several minute black dots on each ring."

Dr. Melsheimer, of Pennsylvania, calls the chief culprit of this genus, the "corn cut worm, varying in color from a pale ash to a deep or obscure brown." They take their qualifying name—"cut"—from their manner of attacking vegetation. Lying concealed during the day, at a small depth in the soil, they come out in the night, and *cut* off, near the surface of the ground, whatever young and tender plant they may chance to reach, sometimes dragging the amputated part down to and over their retreat, that they may feed on the same during the day.

I know of no young plant, red pepper not excepted, either of the field or garden, that is not sometimes attacked by these indiscriminate devourers; though they seem to prefer

cabbages, young corn, and beans. They are hatched and grow to a length of from three-eighths to three-fourths of an inch by autumn, yet, feeding chiefly on grass and small weeds, their injuries are then too trifling to be noticed. But from the 20th of May, to the 10th of July, of the following year, just when the crops of the field and garden are in their infancy and tender age, the mischief perpetrated by these larvæ is often very serious. We are told that the perfected insects or moths from these caterpillars, are those ashen colored, nocturnal millers, so called, that make such Quixotic attacks on the lamps and candles during summer evenings.

There is another naked ground caterpillar, that, perhaps from the want of more thorough examination, I have not yet identified with any of the descriptions of entomologists. It is somewhat thicker and longer than the brown cut worm, of a shining and slightly translucent appearance, of a smoky color, shaded with brown and green, and has a copper colored head. Unlike the brown cut worm, he cuts the young corn below the surface of the ground, and just above the lateral roots. He matures as a larvæ, in July, a little later than the brown worm. Life and health being granted, I intend to procure some moths from these copper-heads next summer, and send them to head-quarters for trial and a name. Their ravages are mostly noticed in the corn-field, and are more fatal to the corn than those of the brown worm.

And now, behold, our fields and gardens are occupied by an army of amputators, with instruments in hand, whose sole employment and pleasure is to lay waste and destroy; and nothing prevents the completing of the destruction which they yearly initiate, except the want of numbers. And it is certainly pertinent to inquire for what purpose they are commissioned and sent among us. Certainly not to utterly destroy the vegetation on which they subsist; for in that case they must themselves perish. And certainly, not to prevent, as a general rule, the maturing of ample crops in field and garden; for if so, they have failed in their mission. It seems probable that their *normal condition*, as to numbers, is just sufficient to cut off and suppress only the redundancy of plants. But when they proceed to amputate whole fields of corn, cabbage, and beans, we have a right to presume that they have gone beyond their instructions and should be punished.

When we consider the extraordinary fecundity of this class of animals,—each female moth laying from two hundred to five hundred eggs, it is more wonderful that they are kept so near their normal number, than that they occasionally greatly exceed it. Taking the lowest number of eggs,—two hundred to each pair of moths,—to keep the number uniform, from year to year, ninety-nine out of each one hundred must fail to produce a perfect insect, and one only must succeed. The agencies commissioned to suppress the ninety-nine have never yet exceeded their instructions to the amount of one ninety-ninth part of the work assigned them; and do not often fall short of fulfilling the same to an equal degree of accuracy. This is more than can be said of some of our modern generals.

I. B. Hartwell.

Wilkinsonville, Mass., 1867.

For the New England Farmer.

NOXIOUS ANIMALS, INCLUDING INSECTS.---NO. V.

Cut Worms.

Perhaps if we could get some glimpses of the probable utility of these *Agrotidians* under consideration, we might be more willing to endure them under proper limits.

In nature's plan there is no less redundancy of young plants than of young animals; for nature sows liberally, and so should the farmer —expecting that the redundancies will be suppressed. Our insect assists in this work, and at the same time furnishes from his own redundance, subsistence for other animals. Also he mines the soil twice a year—first to hibernate, and secondly to pass through his transformations; thus promoting aeration of the soil, and finally adding to its fertility by contributing his remains.

The agencies by which these insects are kept in check are numerous, and many of them unknown as yet. The most obvious are the birds and toads. The red wing blackbird and cognate species, several varieties of sparrows, though accounted granivorous, and the thrushes generally, forage on the ground, and devour, with other larvæ, many cut worms. Many of these birds seem to hunt rather leisurely and carelessly, seldom stopping to listen for their prey, or to dig into their subterranean retreats. But the common robin is a model hunter. From early dawn to evening twilight he is on the cultivated fields and gardens of his friends, (for he knows and shuns the place where the boys shoot robins and steal their eggs,) hunting for worms, as soon in the season and as late as cut-worms can be found. In hunting, he moves forward a few paces at a brisk hop, and then stops a few seconds to look and to listen; and such is the acuteness of his hearing, that if a worm moves in the ground near him, it is soon dispatched. Both male and female robins engage in this work, Mrs. Robin being the most industrious. Several pairs are sometimes seen on the same field, each taking a different portion of the hunting ground. Our robins, from kind treatment, have become quite tame, approaching so near that when hoeing in the field, I have repeatedly and distinctly witnessed all that is here affirmed in reference to their habits. They have one weakness,—the like of which is incident to the parental affection in some of

their superiors,—that of feeding their full grown children for some weeks after they have left the nest; working hard themselves to support their offspring, as young ladies and gentlemen of leisure.

It has been estimated on reliable data, that a brood of five young robins and their two parents consume on an average 200 larvæ daily. Add to this the number taken by other birds, and the unknown quantity captured by the nocturnal toads, and we can appreciate some of the agencies that keep these marauders under restraint. Yet there are other agencies, not well understood, which occasionally are more efficacious than those enumerated. In 1862 the amount of cut-worms with us, was at least six times its usual number; while in 1861 and 1863 the number was about an average one. Yet during these years there was no corresponding diminution and increase of insectiverous birds or toads. An unusual redundancy of tent caterpillars, canker worms, field mice, &c., is occasionally followed by an unusual scarcity, from causes unknown.

Perhaps it is expected that some methods will be suggested by which the ravages of these insects may be prevented. Most certainly; and the reader shall have the benefit of what little I know in this direction. First, then, take and pay for the NEW ENGLAND FARMER, a paper too well known and appreciated to need a word of encomium; The *American Naturalist*, Salem, Mass., at $3 per year, or the *Practical Entomologist*, published monthly at Philadelphia, at 50 cents a year. Next, encourage and cherish the toads and birds, especially the robins, and not excepting the crows, taking care to tar the seed corn, according to frequent directions given in the FARMER. Then drive away all the boys that shoot and rob the birds, and thin out the cats. Protect some of the cabbage plants with hollow cylinders or prisms, four or five inches high, made of paper, bark, or thin wood. For these ravagers travel in the night from plant to plant; not under ground, but on its surface, and will not scale a perpendicular wall, a few inches high. Last and best of all, go into the cultivated fields and help the robins dig the transgressors out from their shallow retreat, generally immediately under a dilapidated plant, and destroy them or collect them in a dish and commit them to the love and good will of the poultry.

Salt and salt marsh mud is recommended as a disperser of these and other field vermin. I know that strong brine, liberally applied to the laying boxes, roosts and walls of the henhouse will effectually banish hen vermin; and I know that very weak brine applied to squashes, cucumbers, &c., will kill the vines.

For the protection of corn from grubs and other larvæ, the following remedy has been given: a tablespoonful of salt and plaster, one part of the former and three parts of the latter, applied around the corn, not too near, as soon as it is up. Many intelligent farmers use a similar mixture as a fertilizer; but it is doubtful whether so small a quantity of salt will kill the larvæ.

I. B. HARTWELL.

Wilkinsonville, Mass., 1867.

QUANTITY OF SEED PER ACRE.

There is a great diversity of opinion in this country in relation to the quantity of seed requisite to stock an acre, and we find, oftentimes, that the want of a regular and recognized rule in this particular, is the source of serious failures, and loss of both time and cash.

The usual quantities of the several kinds of seed accorded to the acre in New England is, so far as we are acquainted with general usage, as follows:—

Wheat	1½ bushels.
Rye	1¾ "
Peas	2 "
Barley	1¾ to 2 "
Oats	2 to 3 "
Buckwheat	3 to 4 pecks.
Clover seed, (red)	10 pounds.
Indian corn	6 quarts.

In the "*Farmer's Dictionary*," there is a table in which the quantity of seed usually allowed to the acre by the farmers of Great Britain, is set down as follows:—

Wheat	2½ to 3½ bushels.
Oats	4 to 6 "
Barley	3 to 4 "
Rye	2½ to 3½ "
Peas	3½ to 4½ "
Buckwheat	2 to 2½ "
Clover, (red)	12 to 16 pounds.
Clover, (white)	2 to 4 "
Trefoil	2 "
Rye grass, here called "Witch grass," and never sowed	2 "
Turnips	2 to 3 "

From four to six bushels of oats, and from three and a half to four and a half bushels of peas, would be considered rather a large allowance here. We apprehend there is a mistake in the figures, though we find that in cultivating the flax plant, the most experienced growers in Great Britain, and particularly in Ireland, where the best flax probably in the world is produced, never sow less than six bushels to the acre.

In this country, from half a bushel to three pecks, and sometimes four of buckwheat, and from two to two and a half of peas, are deemed an ample allowance, even on the richest lands. We may, perhaps, account for the superior quantity of seed allowed by the English by the well known superiority of their preparatory labors, and their highly systematic modes of cultivation.

CULTIVATION OF HOPS.

In the old adage that "all's well that ends well" there is a truth of most frequent application in all the affairs of men, but in few, perhaps, more strikingly illustrated than in the business of hop-growing. The soil of the yard may be worked and enriched by the most careful and lavish hand; no pains may be spared in procuring the best roots and poles, nor in planting and setting them; the vines may be most carefully trained, the soil most carefully cultivated, and the depredations of insects most assiduously guarded against, and yet from want of care or skill in harvesting and preparing the crop for market, the whole enterprise may prove a failure. In an article written by William Blanchard, and printed in the old NEW ENGLAND FARMER for 1834, we find the remark that "hops always grow first sort; second sort and refuse hops are made so by unskilful management in picking and drying." But notwithstanding this caution, the hops grown in New England declined so much in character, as to cause great complaints by the purchasers in New York and Philadelphia, in which cities most of our hops were sold. In 1842, on the appointment of Benj. Farnsworth, inspector of hops in Massachusetts, the brewers of Philadelphia and of New York addressed a comunication to him, urging a more careful inspection on his part, and also appealing to the growers for a reform in their habits of picking and curing. They said that hops were annually shipped from Boston and other eastern ports, as first sort, and purchased by the consumer at the highest prices, which, upon examination, were found to contain such large quantities of leaves and stems as to render them unfit for use. We are not informed as to Mr. Farnsworth's success in reforming the abuses complained of, and allude to the subject for the simple purpose of enforcing the importance of carefully observing the following directions, which we condense mainly from Mr. Judd's Hop Culture, for

Picking and Curing.

The time for picking hops is determined by rubbing them between the fingers. The seeds should be full and hard, and well studded with small round dust, of a golden color, at the base of the scales, and the stem of the hops should have plenty of this "condition," as in this is the weight. If the hop is too ripe, the wind will shake out the seed and dust, and loss of weight will be the consequence. If not ripe, these properties have not matured, and the weight will be inferior, but the hops will look better. If there is much picking to be done, and but few hands, it is best to commence rather early, for you will probably end late enough. In picking, bins are necessary. A bin consists of a wooden frame and a bag, called a "bin-cloth." This cloth is made from two pieces of sacking, thirty inches wide —one piece eight feet long, for the bottom, the other, twenty-one feet long, for sides and ends—formed into a bag, and suspended in the bin-frame. If necessary, this bag can have a partition in the middle.

The bin-frame requires two pieces, ten feet long, two by three inches, with the corners taken off and the ends rounded for handles. One foot from each end, bore one and a quarter inch hole for four legs two and a quarter

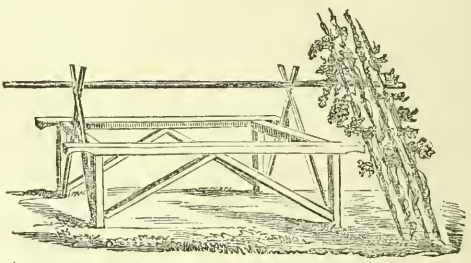


FIG. 7. *Hop Bin-Frame.*

feet long; also one foot from the end mortice in two end pieces, two and a half feet long, three and a half inches wide, and one and a half inches thick. Brace each leg to the middle of each side piece. At each end put a brace to each leg, and let these braces extend above the top of the frame two and a half feet, and cross each other six inches from their ends. These top pieces are termed the "horns." These crosses are a rest for the pole while the hops are being picked. The vines should be cut about one foot from the ground. The poles are then taken with the vines upon them, and placed against the rest. The hops are readily picked from the vine into the bin. In England, hop-picking is conducted with much system. An engagement is made with the pickers, the pole-pullers, the measurer, the poke-boy, the carrier, and the dryers. Thus the grower knows what each hand has to do. The ground is staked into lots of twelve hills square, and a stake is placed in the middle. The pickers are divided into companies, to which are assigned four bins. These bin companies are numbered, that each picker may know where he belongs. With each company is a bin man, whose duty is to pull the poles and carry them to the bins as the pickers require; he also must help hold the "poke," (a long bag of ten bushels capacity,) must carry the bag to the wagon, strip the vines from the poles after they are picked, and help move the bins from

one lot to another. He is paid by the day. Pickers are paid by the bushel. A tin ticket indicating the number of bushels picked is given to the picker, upon which he draws his money at the office of the grower. A boy attends the measurer and helps hold the bag. The call to work, to dinner, &c., is made by blowing a horn. As soon as the kilns are supplied for the night, (for drying goes on night and day,) the work stops. One measurer, who acts as foreman, is required to about twelve companies. After picking is over, the poles should be stacked.

A Vermont hop-grower uses bins about 8 feet long, 2½ feet high, 3 feet wide at the top, and 2 at the bottom. The object in having

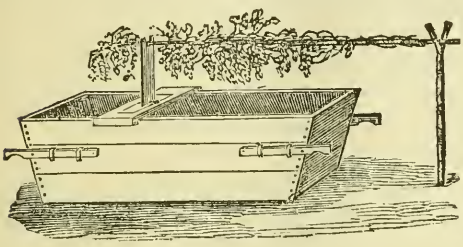


FIG. 8. *Picking-Bin.*

the bins narrower at the bottom, is to render it more easy for the pickers to stand close to them. A board is fitted across the bin near one end, having a narrow cleat nailed upon each end of it, so as to hook on to the sides of the bin. Upon the centre of this board is nailed another piece about a foot long and 4 inches wide, through which a mortice, 1 × 4 inches, is made to receive the standard—a piece of board 4 inches wide and 30 inches long, with a notch in one end for the poles to rest in. The standard is kept at the proper height by a pin, as seen in figure 8. A crotched stake is set for the but end of the pole to rest upon. At such a bin, three girls and a man can work to good advantage. The man pulls the poles, first cutting the vines two or three feet from the ground, lays them upon the bin, helps pick, and throws them off in a pile. By taking four or six rows, and six hills in each row, we bring as many poles together at one place asis convenient. When the bins are too full for convenience in picking, the hops are shoveled into sacks, in which they are conveyed to the kiln. The owner or some very careful man should attend to this and see that all are picked well. Where any are found with bunches of hops, or any large leaves, the picker should sort them and pick them all out. For this, the most careful man is required, and every careless girl in the yard will abuse him as much as she can. Good pickers will gather twenty-five to thirty bushels per day well, but wages should be based on about fifteen bushels for a day's work, as many girls will not pick more than that.

EXTRACTS AND REPLIES.

FAILURES IN WHEAT GROWING.

In the NEW ENGLAND FARMER, of April 6, I noticed an article on raising wheat in New England, by H. Poor. He asks wheat growers to tell their experience. I propose to do so at this time, although I do not think it will hold out much encouragement to my brethren to raise their own wheat. It is now nineteen years since I commenced farming, on what my neighbors termed a worn out farm, and as I was obliged to run in debt for the entire purchase, and had not a dollar with which to buy stock or tools, I felt that in some way I must raise on the farm nearly everything that was consumed in my family. The soil of my farm varies from stiff clay to sandy pine plains.

I have tried many experiments both with spring and winter wheat. It has always proved a failure —not perhaps wholly so, but I do not think I ever got over ten bushels of wheat to the acre, and most always of poor quality. During my experience as a farmer, I have learnt so to improve what is called "worn out" sandy plain land as to raise from twenty-five to thirty-three bushels of rye per acre on it, but the same land will not produce more than five bushels of wheat per acre. I have learnt to raise fifty bushels of corn per acre, but the same land will not yield a good crop of wheat. I can raise from two to four tons of hay per acre, but I cannot raise good wheat on the same kind of land. I have raised six hundred bushels of onions per acre, but when that same land was sowed to wheat the crop did not pay for harvesting, except for the straw. I have sowed a part of a field to oats, and a part of the same field to wheat, and got as large oats as man need wish to harvest, but not more than six bushels of wheat per acre. I have sown wheat with oats, but the oats got the best of it. I have sown wheat where the land was rich,—after onions for instance—and also where the land was moderately fertile,—following corn or potatoes; I have sown it on land long used as pasture, but the results have always been about the same—almost a failure.

I hope what I have written will not prevent the brotherhood from trying experiments with wheat, though I do advise them not to sow too largely at first. I have no doubt that on some farms, and in many parts of New England, wheat may be grown to some advantage. If we can be reasonably sure of twenty bushels per acre, and worth from four and a half to five dollars per bushel, according to Brother Poor, a good deal ought to be sown.

M. S. KELLOGG.

Chicopee Falls, Mass., April 18, 1867.

REMARKS.—We are sorry that Mr. Kellogg has had poor success in raising wheat; but we thank him for so full a statement of his experiments. Failures as well as successes should be reported and published. What would the sailor say to a chart which refrained from indicating the places in which other ships had foundered or run aground?

BARNS AND CATTLE TIES.

Last season I built a barn 60x40 feet, posts 18 feet, with cellar under the whole. I boarded with spruce, one foot wide, and battened with spruce stuff two and a half inches square, split cornerwise, which makes a good substantial batten. I have 18 stalls or ties, so arranged that each creature eats by itself. I have used bows and chains, but cattle would frequently break loose. I now use straps and like them best of anything I ever used or have seen used. I pass the strap through the ring around the stanchions, and fasten the buckle end of the strap to the ring, about ten inches from

the buckle with a piece of leather about two and a half inches long, with a rivet in each end, which keeps all in its place. I have composted manure for 25 years, and think I have learnt something of muck and the way of treating it. O. F.

Tunbridge, Vt., April, 1867.

REMARKS.—Well, now, we should like to know what you have learned of muck, and something of your way of treating it.

OLD APPLE TREES.

I would inquire when is the best time to cut the "tops" from some large apple trees that I have just dug up and transplanted? How much should I cut off? The trees are about ten years old and bore last year.

As I want to set out a few creeping flowers, that will grow up this summer, will you be kind enough to name a few? I also want to raise a nice cluster of showy flowers; please name a few that would look well, and also, a handsome bush; which looks the best, flowering or otherwise? A READER.

East Kingston, N. H., April, 1867.

REMARKS.—It is a very unsuitable time to cut a tree now,—that is, April or May,—but as it is doubtful whether the trees would have sufficient root power to send out leaves on all their branches, the safest way will be to shorten in most of the twigs, so as to reduce the branches considerably in that way. Cut an inch or two from one twig, twice as many from another, and a foot from a third, if it will bear it. Then take out limbs from the inside of the tree, until the top is reduced to about one-half its original size—being careful all the time to preserve a true balance and graceful form of the tree. Wherever you cut, take the branch off close to the one from which it grew, pare the cut smooth, and cover it with a little gum shellac, dissolved in alcohol. Have it nearly as thin as water, and apply with a small brush.

We removed a twelve years old apple tree last spring when in leaf and blossom, treating it as we have described above. The foliage all fell off, but a new growth immediately succeeded, which was quite full and vigorous, and there was a slight growth of some of the terminal branches. This spring the tree looks as well as its fellows about it.

For three climbing plants take the Yellow Trumpet Monthly, and the Evergreen Scarlet Monthly Honeysuckle, and the Virginia Creeper, (*Ampelopsis quinquefolia*,) or American Woodbine.

For a cluster of showy flowers, take Asters in variety, Canterbury Bell, Cardinal Flower and Phloxes in variety.

For handsome bushes take the Rose-colored Wiegela, Japan Quince, (*Cydonia Japonica*,) and the Forsythia.

These few flowers about any house, set in proper positions and growing vigorously, will give it a charm and attraction that it never had before. Thank you for starting in the good work.

ADVERTISING IN FARMER—RAISING POTATOES.

My advertisement in the FARMER of "Seed Potatoes," brought in the orders to such an extent that I don't know but I will have to expend all the small profit on the sales to inform my patrons that I am not able to fill any more orders.

As I have been requested to detail my method of raising potatoes, perhaps I had better do it through the FARMER, though I presume but few if any will be benefited by the practice of one living among the rocks of Vermont from which the mountain streams run both north and south to meet, if at all, somewhere in the Atlantic Ocean. My custom is to break up greensward in the fall of the year; next spring sow with oats, and the following season spread and plow in a suitable coat of green manure to make the land sufficiently rich, after taking off a crop of potatoes, to bear a crop of grain, and stock down to grass. Thus a single piece is kept up but three seasons, taking two crops of grain and one hoed crop.

I have tried various methods of potato seeding, but my greatest success has been when I have used the least seed, cutting potatoes into pieces containing only two or three eyes and dropping about eighteen inches apart, one piece in a place, with rows three feet apart. The first that I ever planted in this way was a choice variety, and the amount of seed seemed so small, that after all were covered except the last two rows, I took up the seed from the last row and put it into the other, making two pieces instead of one in a hill in that row. In harvesting I found the potatoes were very much smaller in this row, and not much if any greater yield than where only a single piece was put in a hill. It may be necessary generally to hoe them twice in order to destroy weeds; but, if it is, the work should be done before they are large enough to be injured by doing it. If stray weeds come up afterward they should be pulled and destroyed. I am not obliged to hoe but once, and that not particularly on account of weeds, for my farm was not remarkably weedy when I bought it, and they have been growing beautifully less ever since.

W. I. SIMONDS.

Roxbury, Vt., April 19, 1867.

REMARKS.—Friend Simonds is not the only one who has experienced the good results of advertising in the FARMER. Our circulation is so large, and among such a reading class, that any announcement in our columns cannot fail to attract attention.

CHANGING SEED.

The belief in the beneficial effects of changing seed for potatoes and other roots is very prevalent among English farmers. They also favor a frequent change in the seed of wheat and other grain. If the objections to in-and-in breeding of animals is based on philosophical principles, why should we not expect that a similar practice with roots and grains would result equally disastrously? From my own experience and observation, I believe that all kinds of roots grown year after year from the same seed and on the same quality of land will gradually deteriorate. If I go to my neighbors across the way and buy my seed potatoes grown upon land and with manure similar to my own, I should not expect to see much difference; but if I go several miles and obtain those grown upon a different soil and under different treatment, I should look for a difference both in quality and in quantity. Exposure is also important. Potato and other root crops, grown upon land that is exposed to heavy winds and storms will be more stunted in their growth than those grown in a more sheltered and warm place. Five or six years ago I bought of a neighbor a mixture of Irish Greys and King potatoes. I told him I should sort them when I got home, as I had always kept my varieties separate. He advised me not to do so; remarking that the Irish Greys

would not grow as well nor be as productive alone, as when mixed. As he was an old man and a practical farmer, I took his advice, and have since found others who agree with him.

I must repeat what I said in my article on wheat, that I have great faith in the beneficial effect of salt on land situated far from the ocean, and planted to root crops. EDWARD HEBB.

Jeffersonville, Vt., 1867.

USE OF SUPERPHOSPHATE.

In April, 1866, I bought one barrel of superphosphate of lime. I sowed some on my pasture, and some was used on potatoes, corn, and garden vegetables; but I never could see the least benefit from its application, although I watched the pasture very closely. I took some superphosphate and mixed it with muck and dry ashes, and applied it to some small apple trees by hoeing the dirt from around them so as not to injure the roots, then applied about three pints of the compost and drew the dirt back. The fair growth of the trees, and the large growth of grass about them, caused me to think that the superphosphate would do well to compost. O. F.

Tunbridge, Vt., April 15, 1867.

IMPROVED STOCK IN CANADA.

The directors of the Compton County Agricultural Society met at Compton Centre, March 16, for the purpose of arranging list of premiums, &c., for the Fall Fair. After transacting our business, M. H. Cockrane, Esq., one of the members of our Board, invited us to visit his farm, some two miles from the village, for the purpose of examining the thoroughbred stock which he has imported or introduced into the country. We noticed first about 50 excellent swine, old and young. His arrangements for their comfort are admirable. We then examined some beautiful specimens of the Clydesdale draft horses, and afterwards his thoroughbred short horns and Hereford cattle. He has bulls of both breeds from calves up to the Duke of Oxford, a short horn, now five years old, imported and formerly owned by the Compton County Agricultural Society, and to which farmers here are much indebted for good stock. He has also some splendid cows, of both breeds, imported from England, Kentucky and Canada West, with some few yearlings, one of which, purchased at the Provincial Show, Canada West, last fall, took their first prize, and weighs now 1250 pounds. A just idea of the convenient arrangements that Mr. Cockrane has made for the health and ease of management of his stock, can be formed only by visiting his premises. He has just remitted by a Canada West importer, I believe, $7000 to England for choice animals, one of which is to be an entire horse of the Suffolk Punch breed.

After feasting our eyes at the barn and stables, we were invited into his house, where our appetites were most hospitably feasted in their turn.

Of the cheese factory, built last year by Mr. Cockrane, I gave you some account in the early part of last winter. I will soon send you a notice of the time and place of holding our next Fair, and an urgent invitation to all readers of the FARMER who can make it convenient to do so, to attend the exhibition of our society, and also to visit the farm and stock to which I have thus briefly alluded. HIRAM FRENCH.

Eaton, Compton Co., C. E., March 18, 1867.

FROGS.

The season of frogs has come again. It is a pleasing sound to the lovers of nature, and wakes up old thoughts and old associations. A few remarks on the natural history of the little croakers and peepers may not be out of place in the columns of the FARMER.

The first sounds we hear are from croakers. A thousand voices are vying with each other in a strange medley. You approach a pond and you will see hosts of the little croakers lying flat on the water singing with all their might. You catch one of them and you will find him to be of dark uniform green. Keep him out in the warm sunlight awhile and he will turn to a light drab color. Another sound is soon heard blending in with the croakers. It is from a shy fellow. Who has seen him? Who can find him? As you approach his retreat, he is silent, but wait a little—keep still. The sounds start up under your feet, to the right, to the left, but you can't see him. Nor will you hear the sound of a ripple as he dives into the water. The fact is, you are not looking for the little diminutive thing that he is. I had the good luck to capture one. I found him on a little twig, and saw him in the act of singing. As he sung, his throat looked very much like a soap bubble. I caught him in my hand; he was of a light green color, measuring only an inch in length, with a cross on his back like an X. I found him described in the books under the name of Pickering's Hylodes.

I have never seen half a dozen in my life. They are so near the color of green vegetation, and so small, that they are not easily noticed. C. S. P.

CULTIVATING STRAWBERRIES.

Select a suitable piece of ground; enclose it with boards four inches wide; cover the ground two inches thick with manure; spade it up, mixing well; cover the whole two inches deep with muck; mark off one foot each way; set the plants the first week in August; water them until they get well started, and next June you will have a good crop. Then weed and you will have another crop the next year; so you can get two crops and not have to weed but once. This we have found out by experimenting, as the FARMER advises, and know it to be the best way. W.

Clarendon, Vt., April 20, 1867.

REMARKS.—There may be more weeding on a bed set out in May, but there will be less watering, and we think a better crop the next year.

KILLING BRUSH.

I have noticed in the FARMER an article speaking of salt to kill brush, and other wild substances. I have about three acres of land covered with whortleberry brush, which I would like to kill out without plowing, if it can be done without too much expense. If you, or any one else, will inform me how much salt it will take to the acre, you will confer a favor on an

OLD SUBSCRIBER.

Northbridge, Mass., April 14, 1867.

REMARKS.—We do not recollect what article our correspondent alludes to, but have the opinion that it would cost more to kill the brush with salt, than it would to cut and burn it, and then reclaim the land by plowing and cultivating.

Salt is undoubtedly excellent for the land in certain quantities, but it seems to us that if enough were applied to kill a whortleberry growth, that nothing else would grow there, until a deep plowing and thorough mixing had taken place.

If the land is too rough for plowing, and damaged salt can be obtained at a cheap rate, it might be an economical process to cut or pull up the

bushes, dig up the mosses, and uneven places, throw the whole together, and mix salt with the mass as the pile is made up.

It would require two or three years to bring it into a fine condition, and would require overhauling once or twice a year, and perhaps fresh additions of salt as the work went on. When completed, this would form a capital dressing for the pasture.

The cattle would browse the tender shoots that would spring up from the roots that were left in the ground, so that many years might elapse before the bushes would gain any considerable growth.

Try an acre in a manner something like this and report to the FARMER.

INCREASE OF BIRDS AND INSECTS.

The pretty severe laws for the protection of birds are based upon their presumed value for destroying insects injurious to vegetation. But what is the result as a matter of fact? The birds have increased in this town during the past ten years very largely,—it would be safe to say ten-fold. Cultivators of fruit have given the most efficient aid to the law, and the orchards and gardens are vocal with the songs of the numerous small birds, especially protected by the laws. But have not the insects increased in the same or greater ratio? Every year, I in common with my neighbors, make a clean sweep of the caterpillars, going over the trees several times so as to make the destruction certain; and yet every succeeding year brings an increase of these nuisances. I have been an ardent defender of birds and of the bird laws, upon the supposition that an increase of birds would within some reasonable time give relief. I have submitted quietly to the annual loss of a portion of my strawberries and sweeter pears and a larger portion of my finest cherries and blackberries, with the fullest faith that while the birds were devouring a fair share of these delicacies, they would rid me of some proportion of the insect pests of the orchard and garden. They have not done so. The insects are more numerous than ever, in spite of hand crushing, brushing, scraping, and a deluge of soft and whale-oil soaps. My experience is verified by that of my neighbors. To what shall we look for relief? The more trees we have, the more birds and the more insects. The ravages of the canker worm, caterpillars and borers are growing worse from year to year, and fruit-growers are debating whether they can afford to support and feed the birds as well as the insects. Already one orchard of four hundred noble apple trees has been denuded of its trees and the land laid down to grass, because the owner found it impossible to prevent the ravages of the insects, and others are debating whether they had not better follow in the same track. If you can give us any comforting advice pray do so.

Dorchester, Mass., April, 1867. J. A. H.

REMARKS.—We are fellow-sufferers with our correspondent, and cannot administer much comfort. Is New England peculiar in this respect? What have other people done in England, France, and Germany? Have not destroyed the birds, we trust. That insects have increased, there is no doubt. But does not supply usually increase demand, as well as the reverse? If we supply a large variety of food upon which insects of all sorts delight to feed, is it strange that their number increases? You destroy the caterpillars on your premises, but your neighbors, perhaps, permit thousand of wild cherry trees and other plants to grow luxuriantly all about them, which supply food abundantly for legions of these insects. A universal onslaught will only exterminate them, and so of other nuisances.

TOP DRESSING GRASS LAND—RAISING ROOTS.

I see a great deal in the FARMER about top dressing, and perhaps a little of my experience on the subject may be acceptable. About thirteen years ago, I bought two acres of land, one acre of which was plowed, the rest in grass, except one-half acre on which the buildings and some apple trees stood. The first year the hay hardly paid for mowing. In the fall I cleared out the woodshed and spread its contents on the grass land. As soon as I could, I seeded down the remainder to grass, and have mowed it yearly, orchard and all. I have continued top dressing ever since, though for the few first years I had but little to apply. After putting what I want on my potato patch, I now spread the rest on my grass. In the fall I put on my summer manure. But having come to the conclusion that there is a loss in applying it in the spring, I shall let my manure lie this year in the shed till fall.

I usually mow twice; about the first of July and September. I have about one acre in another place among the rocks, which I mow but once, allowing my cows to take the second crop. This some of my townsmen think the best way, believing that it does not hurt the land so much for the cows to gnaw it down to the roots, as it does to cut it off with a scythe; but I don't think so. I do it simply because my cows want something more than they can get in the pasture during the latter part of the season. On the hay which grew on these three acres, I wintered, in 1865-6, two cows, a horse, and four sheep, and kept two cows six weeks. The past winter, 1866-7, I have kept a calf in addition to the above stock, but I am a little short for hay, as my second crop last year was not more than half the ordinary yield. These three acres usually produce fodder enough for two cows, a horse, and four sheep. In this northern country we find that it takes two and a half or three tons of hay, or its equivalent, to winter a cow. About three-fourths of the apple trees have died out, and the half acre of land near the buildings, produces at least three tons of hay, as good as any grown in this county. I have been in the habit of raising from thirty to fifty bushels of carrots every year which my animals eat, except a few which I sell for coloring butter. The past year, however, I raised about sixty-three bushels of carrots and mangel wurzels, and feed all but eight or ten bushels. These were raised in my garden on thirteen and one-half square rods; the mixed seed being sown broad cast. When harvested I had forty-three bushels of carrots and twenty of mangel wurzels. True, this is not quite as big a story as that in the FARMER, April 20, where one man is said to have raised sixteen hundred, another twelve hundred bushels per acre, as mine comes a little short of eight hundred. But I do not manure so high as some *premium* farmers. I weighed one mangel wurzel that weighed five pounds, and another three pounds. Some of them will measure near two feet in length. A SUBSCRIBER.

Westfield, Vt., April 25, 1867.

POTATOES AND CORN.

There are various and conflicting opinions as to the best mode of cultivating potatoes. While some advocate seeding with small potatoes, a majority

condemn the practice and plant the largest. Some say, cutting the potato injures the germ; others say a better yield is had by having three to five eyes in a cluster, planted in drills ten to twelve inches apart.

Judge Baxter, of Bellows Falls, Vermont, said to me many years ago, that he took a peck of lady finger potatoes, and patiently sat down and cut out every eye separately, and planted them singly in drills four to six inches apart. From the peck he dug twenty-six bushels. This fact upsets the theory, that cutting injures the germ.

Your correspondent, "E. B.," of Derry, New Hampshire, having publicly answered my private letter, I feel constrained to reiterate the statement that three or four butts to the hill was excessive seeding, and I think will not meet the approbation of good farmers. A handful of corn in a hill will give small ears and small stover. All esculents want room to grow. I was much interested in the general statement. Your cutting off the tips is the Long Island practice, as they work for marketable potatoes. Should it be economy, plant the tips and make small potatoes for stock. Then all the seed is saved.

Does not hilling too much, cut off many little rootlets, and in drought turn the water from the hill into the hollows, away from the roots that are drawing nourishment through every eye into the tuber? Perhaps flat hills would be better adapted to dry than moist lands. The flat tined fork is better than round, for pitching out potatoes or other vegetables, especially in drills.

Corn, as we know by its strong diverging roots, seeks its nourishment like a tree in all directions, to make "the blade, the ear, then the full corn in the ear." To meet the case, spread and plow in your manure, and get rid of the tedious process of dunging out in the hill. Raw manure in the hill ferments, heats, and yellows the tender young corn, and when its roots get away from it, it begins to grow green and strong. Compost added in the hill would of course much increase the crop. Hill as little as possible, and cut off as few roots as possible in cultivating and hoeing. H. Poor.

Brooklyn, Long Island, April 20, 1867.

DISEASE IN CHICKENS.

Is there any remedy for the disease which this year attacks so many chickens, showing itself chiefly in weakness of the legs, and usually proving fatal?

What can be done for a hen (Sebright Bantam) which lays soft eggs, though having plenty of lime, &c.?

Information on these subjects will very much oblige F. M. R.

Brookline, Mass., April, 1867.

Remarks.—The trouble with the chickens is not an epidemic, we think, but is owing to some local influence, such as exposure to dampness, or cold, or placing too many chicks with one hen. The latter is a mistake often made. The young chickens need the animal warmth of the mother quite often, and nature has supplied her with an unusual amount for a considerable time *after* they are hatched as well as during incubation.

An unvarying rule should be, to keep chickens *dry* and *warm*, and keep them in the sun as much as possible at the same time. When this rule has been strictly observed, we have rarely known young chickens or turkeys to fail in growing rapidly and vigorously. It would be hardly expected, however, that there would be *no* exceptions. Without knowing the particulars in the above case, we should conclude that their sickness is occasioned by dampness and cold.

It is not impossible, that diseases in poultry are hereditary. Why not as well as in cows, horses and other animals?

Hens occasionally lay soft eggs—but we have never known one to do so habitually. Will some of our careful poultry raisers come to the aid of our correspondent and ourselves?

RINGING FRUIT TREES.

I take the liberty of writing you in relation to an experiment made by my neighbor, Capt. Joseph Davis, upon two apple trees that are growing in front of his house in this village. The trees in question had always been barren, with perhaps the exception of bearing one year a few inferior apples, yet they blossomed full each year. Having noticed that a barren tree, from which a portion of its bark was accidentally torn while in full blossom, bore a good crop the succeeding fall, he at first girdled a large limb of one of his trees near the trunk, clear to the wood, taking care not to *cut* the wood, removing about one-half inch in width of bark the entire circumference of the limb. The result was, the limb was heavily laden with fruit, in fact "*hung full*," while upon the remaining branches there were no apples.

The following year he girdled the trunk of the same tree, next to where the branches put out; and the result was the *entire branches* were so heavily laden with fruit, that he was compelled to prop them up to keep them from breaking. Last year he girdled the other tree in the same manner, when it was fully in blossom, with the same result. In all these cases, the trees, to all appearance, are not at all injured by this process of making them productive. Mr. Davis has been frequently urged to publish the result of his experiments, but has thus far declined lest they might prove fatal under other circumstances, but having demonstrated the beneficial effects of the process, he has consented to place it before the public.

L. H. Chandler.

Baldwinsville, Mass., April 15, 1867.

Remarks.—This process for inducing fruitfulness, is well known to fruit growers, and is usually termed *ringing*. Its object is to prevent the natural downward passage of the sap, and to force it into the branches above the girdle, and thus to secure fruit of greatly increased size and amount. Premium specimens are sometimes produced in this way for the tables of our annual fairs. But Mr. Downing says it is always more or less injurious to the health of the branch or tree, and he entirely disapproves of the mode, except as a curious experiment. Baker says, it cannot be recommended for general use, though allowable in certain cases. Lindley says, if performed extensively upon a tree, it is apt, if not to kill it, to render it incurably unhealthy. A cord tied snugly around a limb or the whole trunk, is said to produce an effect similar to ringing, with less injury to the tree.

CRANBERRY CULTURE.

I notice in nearly all that I read on the cultivation of the cranberry that a considerable outlay is recommended to prepare the ground for setting the vines, which is discouraging to a young begin-

ner with small means. I therefore propose to give a short account of my operations and success in raising this fruit.

I commenced in 1843 by ditching just to take off the water from a swamp of seven or eight acres from which I had cut a good growth of wood and timber, and built a dam to flow the same at $25, on contract, and left it for three years, supposing the water would kill the bushes and all green vegetation. But the water was so shallow that it evaporated in summer so as to show the ground, and the brakes and bushes lived through the flooding. In August, 1846, I drained off the water and in October cleared up the brush and burned it, and set about one acre to vines, in bunches about the size of a quart measure, cut from beds with a hoe, three feet apart, by chance.

I found a few patches of natural vines which grew finely after the flooding and bore well.

I had nothing to call a crop till 1850, when I had about twenty bushels. They increased to fifty barrels in 1855, and brought $13 per barrel. Since then they have increased, but are now on the decline. They have had no cultivation except mowing over the vines to top the grass and bushes.

On another small swamp, with a low place nearly round it—the centre higher—with a thick bed of peat partly decomposed, I cut the bushes, covered the stubs with water one summer, cleared the bushes and burnt them, and set the vines eighteen inches apart; the vines to set were pulled up by the roots. I don't get a crop as *soon* as some represent, but this has given beautiful crops.

A pond-hole of from one-half to three-fourths of an acre which held water so late in summer that no tree, bush or grass grew in it, had six inches of rich, black mould, then four or five inches of a clayey substance, then pure white sand.

I ditched and set vines in it, it being near my house. They were set at odd times, and almost all times of the year, except when the ground was frozen. Some of them have not come to maturity and bear but few berries. It has been kept clear of weeds of all kinds. In 1865 I gathered 153 bushels, heaped measure, and *three bushels, three pecks and six quarts from one square rod!*

One of my neighbors who has gone into the business says it is as easy to raise cranberry vines as witch-grass. I know a meadow of three acres, topped at two shillings per rod, which for want of three inches of sand, has come up to grass—apparently from seed,—thick enough for a full crop, and is now a meadow of grass and vines; the vines have been growing eight or nine years. Last year they gathered about thirty bushels, the best crop they have had. My best crop, 113 bushels, was in 1865. A Subscriber of the Farmer.

Remarks.—We are greatly obliged to our correspondent for the above account. Several years ago we visited his cranberry meadows and found some of the best examples in cranberry culture that we have ever seen. His statements are reliable. He is now quite advanced in life, and we suppose withholds his name, because he would be scarcely able to answer inquiries addressed to him on the subject. In a small quantity, which he once sent us, we easily selected *twelve* berries, which, laid end to end, measured full twelve inches in length. They were of the bugle variety.

GRAPE TRELLIS—TRANSPLANTING EVERGREENS.

I have been a constant reader of the New England Farmer for thirteen years, and have the numbers on file. They form a complete agricultural library, which, for cheapness and real value, cannot be excelled. Reading them is like visiting the farmers of New England and conversing with them upon all subjects connected with our profession. It is very interesting to look over the market reports and compare past and present prices. As there is much said about grapes at this time, I will give you my plan for a trellis. I set some good posts, about six feet high, then take some plank twelve feet long and six inches wide, spike one end to the top of the posts, letting the other rest on the ground, then nail slats across the plank and you will have an excellent trellis, which will support the vines much better than an upright one. The vines can be covered in winter without taking them down, which is very injurious.

I wish to inquire, through the Farmer, the best time and method of setting cedar and other evergreens. C.

Washington Co., Vt., May, 1867.

Remarks.—The latter part of May and June are favorable months for transplanting evergreens. Just as the buds are swelling to burst is said by some to be just the nick of time. But, whenever transplanted, remember that a tree out of the earth should be treated much like a fish out of water. To as little air as possible, and to no sunshine at all should the roots of evergreens be exposed. Remove them in a rainy day, if you don't like to work nights and mornings.

RAISING POTATOES, IN VERMONT.

Lest you, Mr. Editor, and others remote from the Green Mountains, should think that all Vermont farmers raise potatoes as Brother Simonds tells you, in your issue of May 4, that he does, I want to say, point blank, it isn't so. His is the identical method my father and his neighbors used when I was a boy of eight years old, and which was continued through my minority.

I am now about to turn the maiden lady's second corner,—sixty—and my present method is to spread in the spring from thirty-five to forty-five ox-cart loads of green manure on an acre of mowing land, that needs improving from less than a ton to over two tons product of hay. Take a large double swivel plough, No. 85, I obtained some ten years since of Ruggles, Nourse & Mason, two yoke of oxen, and plough the ground from nine to ten inches deep. Next spread on a moderate coat of well rotted manure, and harrow it in well,—the rough furrow of the double swivel plough, facilitating its commingling with the soil. Plant rows three feet apart, hills from fifteen to eighteen inches, with from three to five eyes of the California seed, near the top of the ground. In hoeing, hill up slightly, though it is with a vengeance we keep the weeds where they should be, for the more manure the more weeds. Crop, three hundred bushels; a profitable cattle feed. We raise table potatoes after the same process, but none for the market as we live twelve miles from a depot. Seed to grass the next year—the more of the grass seeds the better,—but in connection with a thin crop of wheat or oats, keeping the land up only two years.

We also plough and manure in the same way, seeding down to grass in connection with a thin grain crop the first year, keeping it up only one year, and find it tends much to the enlargement of the hay mow.

Some of my neighbors planted corn and potatoes last year, after Brother Simonds' practice, on oat stubble, and had both entirely destroyed by the pestiferous wire worm. Other fields planted on what we term the "sward," escaped unmolested.

We have wintered this season eighty-eight head

of cattle and horses, and have not been put to any inconvenience by not advertising our surplus produce in the FARMER. It has been taken at the door; wheat at $2.50, corn at $1.70, seed oats at 75 cents per bushel, California potatoes at 40 cents, and a much larger amount of hay called for at from $15 to $18 per ton, than we could supply. The only inconvenience experienced has been to say no, when no more could be spared to supply the present unusual demand for cattle feed. I might add we are accustomed to feed out hay and coarse grains on the farm to the extent of its production, excepting such a time as this.

OLD NED.

Washington County, Vt., May, 1867.

HUNGARIAN GRASS.

Can you, or some of your correspondents, *who know from experience*, inform me and others of the value of Hungarian grass, compared with timothy and redtop? Does it require heavy manuring, and what kind of land is most suitable for it?

A. W. GREELEY.

Nashua, N. H., April, 1867.

REMARKS.—We cannot tell you of the *exact* value of Hungarian grass, as compared with timothy or redtop. We should judge, from an experience in feeding it out to stock, that it is not quite as valuable as timothy or redtop. Perhaps contains less oily matter. Land that will produce forty or fifty bushels of corn to the acre, will bring a good crop of Hungarian grass. It is an annual plant, and for that reason is much less used than it would be if it were perennial. Under many circumstances, it is a valuable crop,—as where it is desirable to keep land up, or where a crop of grain could not be got in. When properly cured, we have found it to be highly relished by horses and cattle.

CULTURE OF CRANBERRIES.

Please inform me, through the FARMER, of the culture of cranberries. What soil they thrive best in, and the cost of setting out an acre of plants. Is it too cold for them in Cheshire county, New Hampshire?

READER.

Cheshire County, N. H., 1867.

REMARKS.—The *cost* will depend upon the *condition* of the land to be improved. Some acres will cost five times as much as others. See an article elsewhere, on the subject by A SUBSCRIBER OF THE FARMER. If you attempt to cultivate the cranberry so far north, we should advise you to select places that can be readily flowed, in order to save them from late spring, and from early autumn frosts.

GRIT IN MAPLE SUGAR.

Having been a subscriber for the NEW ENGLAND FARMER for a few years past, I have become very deeply interested in the paper, and do not hesitate to recommend it to every one interested in farming. Being somewhat interested in the extracts and replies, I beg leave to make some inquiries.

In making maple sugar, there is something which is considerable of a mystery among us farmers, and has been for quite a number of years. I find in the sugar a fine grit, which I separate from the sugar, and sometimes find it in quite a large quantity. This grit is known among us farmers as "nitre," it is not discernible either in the sap or syrup; but when the syrup is boiled down sufficiently for good molasses, this grit (known to us as "nitre") makes its appearance. Its origin, or cause, has not yet been satisfactorily explained. Will you inform me through the NEW ENGLAND FARMER, of the cause or origin of this gritty substance? I would be very glad to hear from any one on this subject.

Will you inform me of the best time to set out apple trees?

G. M. B.

Worcester, Vt., April 17, 1867.

REMARKS.—Some experienced sugar makers will be kind enough—we cannot doubt—to answer the queries of our correspondent. We have no exact knowledge on the subject. But why should it not be ascribed to the same cause that produces grit in ashes, or the sharp edge of some grasses?

Set out apple trees now—the sooner the better. Those intended to be set ought to be dug out before the foliage starts.

"BONE FLOUR."

That pulverized bones are very valuable manure, there can be no doubt, although some of your correspondents deny the fact. I think I can comprehend the cause of their failure to realize the benefit of its application. Fresh bones that have not been leached or boiled to extract the oil (which is nearly all that is valuable as a fertilizer) are one of the most valuable and enduring manures that can be applied to any crop. The reason then, that so many have failed to realize any benefit from the use of bone manure, is that the soap boilers have extracted all the oil, or its good qualities have been dissipated by long exposure, without which the bones are nearly valueless. To collect these bones, a set of outlandish fellows prowl about with a horse and wagon, who enter our door yards, and spy around our buildings, picking up all the bones they can find, and stealing clothing or other articles that lie in their way. They are a great nuisance, and we have ordered them off our premises more than once, and received their curses for our pains. The tin peddlers offer the boys half a cent a pound for bones, and they scour the country and are about as bad as the foreigners. They will search the woods and by places to find the bones of some poor old horse or cow that has been dead twenty years, and sell them to be ground into bone manure, when there is no more virtue in them than in so much sawdust. This is the reason that your correspondents receive no benefit from its use.

North Pembroke, Mass., April 20, 1867. C.

"GRAFTING WAX."

I hope none of your subscribers will use the article advertised as "Grafting Wax." We have several trees nearly ruined by using it. It kills the bark where applied, and in nine cases out of ten, permanently injures the tree. The best grafting wax ever used is made of clay and horse manure—there is no danger in that. C.

North Pembroke, Mass., April 20th, 1867.

TO PREVENT SOWS EATING THEIR PIGS.

Give them some good bright early-cut hay daily, for a few weeks before the time for the pigs to come.

H. B. HOWARD.

Braintree, Vt., April, 1867.

—A Herkimer county, N. Y., dairyman estimates that 45 cows require 100 tons of hay to winter them through.

CULTURE OF WHITE BEANS.

There is scarcely any vegetable that is more acceptable or more economical and wholesome than the bean. It is easily raised, harvested and preserved, and may be prepared for the table in various forms, all of which are grateful, whether the bean has reached maturity, or is used in an unripe state.

We are not certain that we can assign a satisfactory reason why this crop is so seldom cultivated by itself, or why it is so rarely successful, when it is so cultivated. In some sections, the prejudice against growing the bean separately, or allowing it the entire use of the land, is universal, and although large quantities are produced, the vegetable is almost invariably the product of grounds devoted to Indian corn, as the principal crop—the bean plants occupying a position in or between the hills.

We find nothing similar to this practice in British agriculture, to which, indeed, the corn crop is unknown; but we find that beans are there much more extensively cultivated than in this country, although the climate of England is intensely damp—a circumstance which, with us, would no doubt be regarded as ruinous to the crop.

That the bean, in all its varieties, is susceptible of being grown separately, is a proposition which our knowledge of vegetable physiology, as well as the deductions of experience, forbids us to doubt. Though we have rarely seen it so cultivated, on an extensive scale, we have nevertheless observed its luxuriance and the unparalleled vigor of the plants when growing in small plantations, on light and well worked sands. It is generally believed that the presence of some other grass-feeding vegetable is necessary to ensure its maturation, and that it seldom ripens when grown separately, by itself; consequently, we rarely find it so planted; but this practice—like a great many others which have obtained wide prevaleuce—is to be attributed to a total misconception of the character and capabilities of the crop.

It is not necessary, by any means, that every leaf and pod of the bean plant be thoroughly ripe before pulling. If proper care be taken in stacking, beans that have not become hard in the pod will mature, and be as sound, white and valuable in the market, or for domestic use, as those which have ripened wholly standing in the field. A lot which we saw last year, that were pulled when every pod and stalk were green—because frost was anticipated—and stacked on stakes and left until thoroughly dry, were white, plump and sound when thrashed out, and were fit for any market.

We have tried various ways of stacking, but find placing them upon stakes set upright in the ground, the best. Birches make excellent stakes, by leaving upon them a portion of the branches next to the stem, some six or eight inches long.

For the New England Farmer.

FOREST TREES

TO TAKE THE PLACE OF TREES LOST OR DESTROYED.

It is not necessary to say anything about elms. Every body is familiar with the appearance and value of the American elm, and ready to assent to the opinion of Michaux, that it is the most majestic of trees. But this elm is not suited to our purpose, which is to make up for the loss of trees along the borders of by-roads and lanes. The elm is a voracious feeder, and sends out numerous roots near the surface, so that nothing, not even grass, grows perfectly well in its immediate neighborhood. It is incomparable for broad, public ways. For streets, in towns, the English elm is better.

The oak is the king of the woods. We have more than a dozen species in Massachusetts, all beautiful and all adapted to our purpose; for the roots of the oaks go down very deep, and thus leave the surface soil for smaller trees, and for shrubs and undershrubs. Although, if we wish the oak to succeed perfectly and show its unsurpassed beauties at all periods of its growth, we must give it the benefit of all the soil, from the surface down.

All the American oaks flourish in our climate, and the two varieties of the English oak at least as well as any of our own.

There are two groups of the oaks: 1. The White oak group—including the Over cup, the Post oak, the Swamp White oak, the Chestnut oak, the Rock oak, and the Chinquapin, the English oaks, and the Turkey oak; and, 2. Those that are like the Red oak, with the Black oak, the Scarlet oak, the Pin oak, and the little Bear oak. All these are beautiful, and some of them are as rare as they are beautiful, especially the Over cup oak, the Chestnut oak, and the Rock Chestnut oak, remarkable for their gracefulness, and the Scarlet oak, and the Post oak—the former for the extreme beauty of the foliage, at all seasons, and the latter for the singularity of its star-shaped leaves. It would take many columns to speak of the oaks as they deserve. Any of your readers who want to know more about them must read the books in which they are described.

There is another tree which, however well

known now, ought to be still better known and more highly valued. It is a model of neatness. The bark is smooth and clean, and of a cheerful color; the leaves nice and brilliant, in shade and in sunshine; the nuts very sweet; the wood very valuable. Literary people ought to respect it, as its German name gives us the word book; indolent or thoughtful people ought to like it, as it gives a deep, clean shade to recline in. No tree is fitter to be near a studious or a luxurious home than the beech.

The nut trees are shamefully undervalued with us. Trees which, everywhere in Europe, are carefully cultivated and furnish an important part of the food of the inhabitants, are here neglected or banished to distant hills and pastures. Such are the Black Walnut and the Butternut, to which might be added the tree which bears what we call the English walnut, which grows just as well here as it does in France. Each of these would make a handsome border tree. The Shell-bark hickory is a stately, graceful tree, and its nuts the most desirable of all fruits. It requires care and pains to cultivate, but it amply repays all that can be given to it. The chestnut tree is a very rapid grower—is easily raised from the nut, or from plants, interferes little with other trees, has all the elements of beauty in large proportions, and in summer makes the forest resplendent with its blossoms. Its nuts are singularly sweet, far superior to the European, and would, with care, be gradually improved in size. The only experiment for this purpose that I am acquainted with has been successful. John Lowell, well known by the fathers and grandfathers of this generation as the "Roxbury Farmer," left growing on his little farm in Roxbury, some chestnut trees, the fruit of which is as sweet as the common American, and almost as large as the European chestnut. Is there not some patriotic farmer, well to do in the world, living contentedly on his paternal acres, and building and planting to make a pleasant home for his great-grandchildren, who is willing to try the selection and care necessary to improve our native chestnut, hickory, and walnuts?

There are smaller nuts worth cultivating. The common hazels are very easily propagated by suckers or layers, or by sowing the sweet, delicate nuts. The beaked hazel is curious, but probably of no great value. The European hazel may be cultivated with ease and sure success; and its filberts are worth raising.

There are many species of whortleberries, blueberries, dangleberries, bilberries—all natives—which ought to be retained for their beauty and for their abundant fruits. Neither ought the blackberries and raspberries, low or high, to be neglected. These wild fruits are most healthy, and the gathering them is an occasion of most pleasant parties for children. Whortleberrying and blueberrying on the Pigwacket plains in Maine, and nutting along one of its streams, are among the most delightful memories of one old man's happy childhood.

Boston, May, 1867. G. B. E.

For the New England Farmer.

DOES PLASTER PAY?

This depends upon three circumstances, to wit: the soil to which it is applied, the season, and the kind of crop. On a loam, underlaid with limestone, and on that underlaid with mica slate, we have found it very valuable, increasing the amount of the crop from twenty-five to fifty per cent. On sandy or gravelly soils, we have also seen very fine effects from its application. Perhaps a good general rule to determine its adaptation to the soil, will be, to know that the latter is adapted to the growth of Indian corn, clover and most broad-leaved plants. On soils dry enough for these, we have seen its good results. On cold, wet, heavy lands its application is money thrown away. If the season after its application is vrey dry, its greatest effects will not be apparent that year, though we have seen many instances, where a good rain followed the sowing and dry weather followed, leaving it to remain dormant through that season. In such cases its benefits were seen the following year. We have also found it valuable when sown on grass land immediately after taking off the crop, when it gives the grass a vigorous start, preparatory to wintering. When sown on winter grain, fall sowing is especially beneficial. Here the method of application varies. Some roll their seed grain in it and think that sufficient; others sow it upon the land and harrow in with the seed, and another class wait until the grain is up and sow in the morning when the dew is on. Either way gives it to the soil, where it will result to the ultimate benefit of the crop.

Its effects are greatest on plowed crops, and where manure has been recently applied, though a less quantity of the latter is necessary than where it is used alone,—the two in connexion helping each other. By mixing it with yard or stable manure during the winter, once in two weeks—enough to whiten the manure heap, the odor of the manure is destroyed and its value increased in greater ratio than the cost of the plaster. It is excellent sown on all the grains and upland grasses, and is a great clover maker, and an almost sure destroyer of strawberries.

In old pastures, we have seen cases where it destroyed the old moss and introduced white clover in its place. White daisies and Johnswort flourish poorly after its application. Mixed with an equal quantity of ashes and thrown into the hill with potatoes, it is held by many to be just the aliment they need for successful growth.

Such are some of the uses to which we have seen plaster applied, and some of the results that have followed. In these cases it has paid, and that in a rich percentage. We cannot,

however, suppose the results will be the same in all cases. Soils and seasons vary and introduce a necessity for various modes of practice. Of course what has resulted favorably under some circumstances, may fail under others; therefore we can only say, that it has paid in very many instances by more than fifty-fold, and will on certain soils probably continue to pay, while on other soils and under different circumstances it will probably fail. Therefore no positive rule can be adopted for its general use. The farmer, who ought to know his own soil, must be the judge in the matter of its probable benefit. W. BACON.

Richmond, Mass., May 1, 1867.

For the New England Farmer.

HOW PLANTS GROW.

When plants have arrived at a certain stage of their growth, sexual development takes place under the influence of a universal law affecting all organized living beings. This takes place in most cases before the growth is completed; that is, before the plants have reached their full size. In most annuals it commences when the plants are about half grown, as in the grains and grasses, and the growth of the plant in size and vigor goes on at the same time with the process of fructification. In most fruit-bearing trees and shrubs, the flower buds are developed before the growth of the foliage is completed. The same thing is true in the grape and the strawberry and in many perennial plants. The process of fecundation requires that the flowers should receive the full force of the sun's rays, and the foliage is not yet large enough to intercept them.

When this process is completed and the sun's rays become more direct and scorching, the expanding foliage protects the forming fruit as well as elaborates sap for its nourishment. The period of sexual development differs greatly in different plants. In some it occurs in a few weeks after they spring from the soil. In biennials not until the second year. In most trees several years are required. In some plants, as in the century plant, many years are passed before the sexual influence is felt. Most flower buds assume the form of a cup. The ovum or ovary is found imbedded at the bottom of this cup. The cup is formed externally of thick fleshy leaves which enclose and protect the ovum and other delicate and tender organs. Within these protecting leaves are the petals, springing from points between the thick outer covering and the ovaries. Within these are the stamens, each bearing a crown of pollen or fecundating dust, called the anther. The Greek word anthos, or flower, is derived from this, the indispensable organ of all flowers, without the presence of which all the others would be of no avail. Then the pistils spring from the ovaries. They are so many tubes communicating with the internal parts of the ovaries. When these organs have arrived at a certain stage which may be called the orgasm, or time at which they are ready for impregnation, the mouths of these tubes contain a glutinous fluid by which the pollen falling from the anthers is collected and conveyed to the ovaries. When this has been accomplished, the stamens and pistils wither and fall. The petals also fall away. The ovary begins to enlarge, and the stem upon which it is supported begins to lengthen. In some cases this stem becomes quite long, as in the strawberry and cherry. The ovary now begins to assume the shape which the completed fruit is to have. We then say the fruit has set. Just at this point of time, a large part of the forming fruit usually withers and falls, either because the pollen has not reached the interior of the ovary, or from the injurious effects of the wind or weather. But in favorable seasons fecundation is effectually accomplished in a sufficient number of instances to secure the great purpose of nature, the formation of seeds for the continuation of the species. This is the ultimate object of efflorescence and fructification. The seeds are formed and arranged within and around the ovaries in various modes and fashions. Sometimes, as in the apple and pear, the seeds are enclosed in cells in the interior, and the body of the ovary is changed into a large fleshy pulp. In others, the seeds stand out naked upon the surface, as in the strawberry. In others the coverings that enclose the germ are converted into strong fibrous husks which are packed, layer within layer, over the seeds for their protection, as in the maize. Sometimes they are enclosed in sacs or capsules called pods, which consist usually of a thin, soft internal layer, and a stout, thick external one; sometimes the seeds, as in corn, are arranged in long rows packed closely together, and sometimes in circles upon the upper surface of the ovary, as in the hollyhock and mallows. Sometimes the seeds are each covered with a thick, firm scale, as in the pine, which, like a roof, protects it. The seed of the pine requires two years for its growth and ripening, and therefore needs a protection that rain and frost will not destroy. To some seeds, a fine membrane, like the wing of a fly, is attached. The seeds of the elm afford an instance of this. These seeds, when ripe, are shaken off by strong winds, which, by means of their membranous wings, transport them to a distance from the parent tree. In some plants only female organs are developed, while others of the same species, produce only those of the male. In the greater number of plants, the organs of both sexes are found in the same flower and supported on the same stem. These are called perfect flowers, while those that have only the organs of one sex are called imperfect. The wind is the principal means of conveying the pollen from the anthers to the opening pistils. At the right season, if the air is dry and clear, the atmosphere is filled

with a cloud of pollen like fine dust, some of the particles of which fall upon the mouths of the pistils, and are held by the glutinous fluid of which we have spoken. Around a staminate, or male plant, especially a tree, this phenomenon may often be witnessed in a still warm day. This cloud of pollen is carried to a great distance by the wind, and if it falls upon good ground, ready to receive it, it quickens the sperm cells of pistillate flowers, and leads to the production of fruit. One staminate flower is often sufficient to fecundate quite a number of pistillate flowers. Thus one male strawberry plant will fertilize a number of female plants growing around it. The cultivators of this fruit avail themselves of this fact, and occupy nearly the whole ground with fruit bearing plants. J. R.

Concord, Mass., May, 1867.

For the New England Farmer.

THE GARDEN IN JUNE.

There are a few general principles applicable under most circumstances, which should be borne in mind by every gardener; such as, that hoeing or stirring the soil when it is wet is not the time to do the greatest amount of good; that hand weeding may be advantageous at such times, as any disturbance of the roots of plants then is sooner remedied than when the soil is dry. Watering plants in dry soil is of little avail, unless the soil be well soaked all around the plant and below the surface; if done at all, it should be done at evening and the soil stirred on top early the next morning, or, what is better, a light covering of soil sprinkled over the watered portion.

Asparagus.—Do not cut too close, or too late, as the roots may be injured thereby. When it gets spindling or stringy, cease cutting; hoe and clear off all weeds and dress with superphosphate, and let it grow.

Beans.—Those already planted will need frequent hoeing when they are dry; never hoe when they are wet, as it causes rust or other disease. Plant bush varieties for a succession for cooking or pickling; they are good when canned for winter use. Sometimes pole beans planted the first of June will mature a crop, if forced by liquid manure.

Cabbage, Cauliflower, Broccoli, &c.—May be transplanted the latter part of the month for fall and late use. Cauliflower frequently fails for want of moisture.

Cucumbers.—Plant the last week in June for pickles. Protect all vines as far as possible from the striped bug, by dusting with plaster and fine soil and by frequent hand picking. The eggs of the squash bug are deposited on the under side of the leaf; hunt and destroy before hatching.

Egg Plants.—Transplant into good soil abundantly manured with good horse manure; hoe and water frequently.

Fruit Trees.—Dwarf pear and other fruit trees should be trained to good shape by pinching out superfluous shoots and checking the growth of too much wood.

Grapes.—Tie up the branches and pinch out unnecessary shoots. Have an eye for the insects, and if signs of the mildew appear, dust with flour of sulphur freely. Rose bugs are a great pest when the vine is in blossom; sprinkling plaster, hand picking and frequent disturbance are about the only remedies known.

Tomatoes.—Train to trellises or stakes and pinch off the leading or main shoots to increase fruitfulness.

Weeds.—Give them no quarter, but nip them in the bud by keeping the soil stirred.

W. H. White.

South Windsor, Ct., May, 1867.

For the New England Farmer.

THE FUTURE FRUIT SUPPLY.

The question of the future supply of fruit for our markets, both for home use and for export, is, to New England, of great importance. For a year or two past, many single acres in this region have given a return as great as from twenty-five to forty acres of good land in wheat have done in the States west or south of us. And the decline of old, bearing trees is so extensive, from natural causes, that the new orchards are by some believed to be unequal to balance accounts, with the decay of old ones.

There is a constant increase of demand for home consumption and for export, for fruit, especially for winter apples. What is to be the future supply of apples for proper use? Good fruit will be wanted, and if cider is not used for anything else, much will be used in manufacturing vinegar.

When a clear profit is made for orcharding, of hundreds of dollars per acre, occasionally, it becomes all to inquire if the probabilities of such a return are not increasing rather than the reverse.

It seems to be very important to the future interest of the whole people, consumers and producers, that greater care should be exercised, and more judicious efforts be made to preserve the young trees which have been and are being set. Great numbers of trees are set so poorly as to make them worthless. More are neglected when they need mulching, and they die. Many others, still, are allowed to be destroyed by cattle. If they are worth buying and setting, they are worth taking care of. But they are not taken care of; and they, therefore, give no future promise.

Care of trees will pay, if care of lambs and pigs will pay. And old trees need not die of neglect, as they are now dying by thousands, in New England. To trim up suckers, and trim out tree tops, and defend them against foes, and feed the soil for them, will pay. There are old trees enough, now, in New Eng-

land, which have never been grafted, to produce immense quantities of fruit, if properly grafted and cared for.

It is amazing how little care and judgment has been shown in this regard by many farmers among us. Trees have been stuck full of grafts, and then the natural shoots left to overpower and kill them all. If there is any one thing in which there is a greater appearance of imbecility than in anything else in farm management in country towns remote from our large cities, it is, it seems to me, in relation to tree-culture.

One item in relating to manuring, I would not omit. I think I have many proofs that the droppings of hens or turkeys, even when composted with muck, are a dangerous and destructive stimulant for trees. It may cause them to flourish for a short time, but then die. I have numerous facts in mind which seem to declare as above, but this paper is too long already, and I will not narrate them.

Lee, N. H., May, 1867. A. G. C.

MATERIAL FOR COMPOSTS.

The truth of the axiom, that no man, how great soever may be his zeal and industry, can hope to succeed as a farmer, without the aid of manure, is probably what every practical person will at once admit.

Want of manure, indeed, is one of the most perplexing annoyances with which the intelligent cultivator is called to contend. Yet it is one which the exercise of proper forethought and economy in accumulating materials will enable him to obviate. There is probably not a farm in the land which does not contain within its own limits the resources for its fertility, and which might not be rendered productive without the application of a single particle of manure from abroad.

By composting, by *turning in green crops*, by seeing that all the numerous fertilizing agents in the yards, cow, sheep, and hog cotes, in the kitchen, privy, and other places, are rigidly turned into the appropriate channel, the land would soon assume a new character, and the richest harvests salute the hand of the proprietor, where only barrenness and sterility were seen before.

If the farmer could only realize the advantages which would accrue to him from a rigid economization of those fecundating substances which are too frequently neglected and turned to waste about his buildings, he would at once reform his practice, and devote a portion of his time to a department of labor which is to be regarded as the initial employment of every one who is successful in the prosecution of agriculture as an art.

Collect all Vegetable Matters.

The woodlands afford an inexhaustible supply of materials for manure, as do also the pastures, road-sides and commons. Wherever vegetable matter can be obtained, there exists the food of plants. Not a particle of matter which has once been animated with the vitalizing principle of life, is to be considered worthless. Even the *fungi*—the low mosses, and the reeds and rushes of the ravine and the swamp—are all suitable and valuable materials for the compost heap, and may be resolved into a healthy aliment for plants.

SHEEP SHEARING IN VERMONT.

About 1000 of the sheep breeders of Rutland county were present at the first annual shearing of their association at Rutland, on Wednesday, May 1st. The display of animals was very fine, and the shearing process was carried through with enthusiasm. The animal which produced the greatest weight of fleece in proportion to weight of carcass belonged to Mr. A. E. Smith, of Clarendon; live weight, 63¼ lbs.; fleece 14⅛ lbs. Next, "Matchless," owned by Gleason & Jones, live weight 76 lbs.; fleece, 15¾ lbs. On the same day there was a shearing in Shelburne, at which prizes were awarded for the best fleeces, and 16 sheep were sheared, whose average weight of carcase was 13 lbs. 8 oz. The lightest fleece of the 15 weighed 7 lbs. 14 oz. from an animal which weighed 58 lbs.; while the largest fleece weighed 20 lbs. and 10 oz. from an animal whose weight was 120 lbs. 3 oz. One weighing 91 lbs. yielded a fleece of 15 lbs. 12½ oz.; another which weighed 97 lbs. furnished a fleece of 15 lbs. 12½ oz.; and another furnished a fleece of 10 lbs. 15½ oz. from a carcass which weighed only 56 lbs. Still another carcass weighing only 63 lbs. yielded 16 lbs. 12 oz. of wool. Premiums were awarded to Henry Thorp and H. H. Newell, Charlotte, and L. S. Drew, South Burlington.

Snakes.—We seldom destroy snakes of any kind. There is a powerful prejudice, however, existing in the popular mind against these reptiles, though as a general thing few are more harmless. The common striped snake,

and green snake, and even the adders, are all useful to the farmer, as they feed on insects, and are thus powerfully instrumental in diminishing the innumerable hosts of insectivorous depredations which prey upon his crops.

Out of two hundred and eighty species of serpents, only thirty-two are supposed to be poisonous, and of these latter, but one,—the rattlesnake—is an inhabitant of the North. The adder,—the most repulsive of all our snakes,—is by no means noxious, and possesses neither the power to kill or harm.

HOW TO MAKE THE LAND RICH.

In New York City there is an association of a few wide-awake, inquisitive, go-ahead gentlemen, who come together in a pleasant room and discuss any and every subject that has a bearing upon the cultivation of the earth. This association is called the American Institute Farmers' Club, and its doings are reported weekly in the *Tribune*. They meet once each week, at ten o'clock in the morning, and their doors are open to all who wish to enter and listen, or take a part in the discussions. They are doing just what ought to be done,—and ought to have been commenced years ago—in the office of the Board of Agriculture in Massachusetts.

Discussing the subject of manures, recently, Mr. Peter Brown, of Limesbury, Conn., said: "The great question with farmers in this section is manure, and how to get it economically is a very important consideration; but that farmers must depend, mainly, upon the barnyards, stables and hog-pens, for cheap fertilizers, is an undeniable fact."

Some one, with more truth than courtesy, promptly replied.

No, sir, it is not. We dispute it. The cheapest manure that you or any other man can use is clover seed, even at $25 a bushel. Sow clover seed with every grain crop, even with Indian corn, and quit that worst of all practices—sowing oats upon corn stubble. Plow under a crop of clover to serve as manure for every other crop. Mix clover and timothy seed together, and if you get a good timothy sod, do not be afraid to break it up. It is equal to 160 loads of pretty good compost manure to every acre. In applying manure to your land, learn by actual experiment whether it is more profitable to spread it upon grass sod and depend upon that to make corn, than it is to put the manure in corn hills.

We greatly need examples of turning under green crops in our New England farming, and hope that many will exist before the close of the next growing season. They may be made on a small scale, and, we have no doubt, will afford more encouragement than the use of any special fertilizer has yet afforded. Try it and report results.

AMERICAN FIRE EXTINGUISHER.

A few days since, (May 9,) the invention shown in the accompanying engraving was practically tested on the Fair Grounds in this city. We were not present ourselves, at the trial, but a friend who witnessed the test, spoke of it as a wonderful success. A committee of leading business men and insurance agents testify that the experiment was perfectly successful. The fires were started in piles of tar barrels, filled with shavings and saturated with kerosene, and after being thoroughly ignited the flames were completely subdued—the fire put out—in one case, in one minute, in the second, in one minute and seven seconds. A frame building, erected for the purpose, and containing inflammable articles was fired, and when the whole building was wrapped in flames, three men, each with an extinguisher, played on the building and put out the fire *in thirty-seven seconds!* Hon. Daniel Needham of this city, is President of the Company which manufactures this machine, and will give all desired information.

BREEDS OF CATTLE.

A correspondent of the Vermont *Farmer* very concisely gives his opinions of the merits of the principal breeds of cattle:—

In view of all testimony and our own long experience, we are constrained to believe the pure Durham short-horn is the best blood to use to improve the present race of cattle in New England. The Devons are a smaller and beautiful breed. The oxen are as much alike as two peas, of a beautiful mahogany red color, with long, handsome horns, but they are too small for the Brighton market or beef. The cows give rich milk but a very small quantity. The Ayrshires are hybrids from the Durham on the one side and native cattle of Ayr on the other, and are about the size of the Devon and as hardy and better milkers. The Herefords are not fit for the dairy but have good beef and working qualities, and make sprightly, large and handsome oxen. As for the Alderney and Kerry cattle, they are not fit for a grazing region or general farm purposes.

While the Dutch are the great rivals of the Durhams in size, but not in symmetry of proportions, they will match any breed in the world at the pail; make powerful oxen, but are said not to take on fat, or mature so early as the improved Durham short horns. We should, though, prefer the Dutch, next after the Durhams, for a cross with our best cows.

AGRICULTURAL ITEMS.

—Some farmers sell two crops in the winter. In the fore part it is hay, in the latter part hides.

—In Northern Ohio sheep have wintered poorly. Fodder unusually scarce.

—A correspondent of the *Maine Farmer* thinks he has discovered the cause of smutty corn in the use of muck in composting manure.

—The death of Lois Weeden, of England, originator of the "Lois Weeden" system of husbandry, is announced.

—The *Prairie Farmer* says that Osage hedging has become the chief mode of enclosure on the prairie farms.

—So great is the demand for the Osage plant for fencing purposes, that the price has recently risen from two and a half to four dollars per thousand, in the State of Illinois.

—On a charge of destroying fruit, the city council of Madison, Ind., have passed an ordinance excluding honey bees from the limits of the corporation—guilty or not guilty.

—Radish or lettuce sowed around the hills of cucumber and other vines is said to be a protection against the stripped bug, which prefers this food to the young vines.

—Hon. Josiah Quincy who sells milk in Boston from cows kept on the soiling system, estimates the value of the manure from a cow to be equal to the value of her milk.

—In Germany sheep are washed under cover; first in water at a temperature of about 80°, and then exposed to a shower bath of about 62°, until the wool is of a snowy whiteness.

—A farmer in Iowa destroyed the grub-worms that were destroying his corn, by catching a lot of moles and putting them into the corn field. The moles may be caught by the use of cow's horns with the pith out.

—The Connecticut River Valley fair will be held at Keene on the 17th, 18th, and 19th of September next. The Cheshire Co., Agricultural Society, as a Society, will hold no fair, but will be represented in the Connecticut River Association.

—Some farmers never sharpen their hoes. Hoes for the boys, in particular, should be kept sha p at all times, by grinding or filing. They should not be left in the open air at night but should be rubbed dry and hung in a dry place.

—Mr. Kendall, formerly of the New Orleans *Picayune*, but for years a wool grower of Texas, writes to the *Rural New Yorker:* "On the 13th of March, after a warm growing spell, the worst sleet storm ever experienced in this State set in; away went the grass; the ewes had no milk, and the consequence you can easily judge. I hoped to raise 1800 lambs; but if 500 rub through, I shall be satisfied. The weather up to April 7, has continued cold, raw, and backward."

—A correspondent of the *Maine Farmer* says that on the Islands which are the home of the Jersey cows roses bloom through December in the open air, and that in New England they need blanketing as much as a fancy race horse.

—New Hampshire has three million dollars invested in horses, four and a half million in cattle, two and a half million in milch cows, two million in sheep, and six hundred and seventy-four thousand in swine.

—Mr. Nathan Mosely, of Goodground, N. J., writes to the New York Farmers' Club that he has shot at different times four king birds which he thought he caught in the very act of catching honey bees, but on examining their crop no bees were found.

—Mr. Chenery, of Belmont, Mass., claims that the Dutch cattle are much superior to any other breed for cheese making, or for the production of milk for family use, or for city markets; that they are pre-eminently adapted to meet the wants of the general farmer, combining in a great degree the desirable qualities of dairy, beef, and work cattle.

—To keep borers and other insects from fruit trees, the following wash is recommended by one who has tried it. Put into a water-tight barrel, one pail soft soap, four quarts of sulphur, four quarts air slacked lime; four quarts of wood ashes, half bushel of cow or hen manure, and water enough to fill the barrel.

—The custom of working horses immediately after being fed, and especially when long intervals elapse between hours of feeding, weakens the digestive organs and predisposes them to attacks of colic. Very cold water given when the horse's body is heated, and a sudden stoppage of perspiration, are also exciting causes of this disorder.

—A large per cent. of the lambs in Rutland Co., Vt., have died, either at birth, or when but a few days old. Some of the most experienced sheep raisers are the greatest losers, and cannot account for this unusual mortality of the lambs. The same is said to be the case in many places in Addison county.

—W. B. Merry, of Anson, writes to the *Maine Farmer* that he has sixty American Merino ewes, to which he commenced feeding one bushel of potatoes per day, one week before lambing. Forty-eight of them had fifty lambs, up to April 13th, and all were smart and doing as well as lambs dropped in May. He had not lost a lamb, and seldom had to help one to suck, notwithstanding it was quite cold at times. He had one lamb that

weighed twelve and a half pounds, dropped by a yearling ewe.

—A regulation recently adopted in relation to the market in Havana requires the daily attendance of a veterinary surgeon at the slaughter house, to inspect every animal bought to be slaughtered. In view of the late disclosures in relation to the trichinous disease, should not some measures be adopted in this country for the safety of those who use pork as a food?

—Owners of horses are indebted to the Veterinary Department of the *Prairie Farmer* for the statement that, "Strangulation of the intestines by pedunculated tumors, or hypertrophied appendices epiploicæ, is among the lesions to which the intestines are liable." Webster's Unabridged is among the premiums offered for subscribers to the MONTHLY NEW ENGLAND FARMER.

—Richard McGraw, of Livonia, Mich., gives the following as a preventive of grub in the head: Take a feed trough; put tar in it; take salt and sulphur; put it over the tar. The preparation will prevent the *Œstrus Ovis* from laying its eggs on the membrane of the nose of the sheep. It will also kill ticks, so that sheep which use it will not have a tick on them.

—A man out west got ready to plant his potatoes before the moon showed the right sign, and so one day he went very quietly into the field and did up the job in good order, being careful to finish at night before the moon got up to see what he was about. The result was he had a good crop, and now brags how nicely he "come it" over that potential orb.

—The *Prairie Farmer* has not the shadow of a doubt of the ultimate success of the beet sugar enterprise in Illinois and other Western States. About 100,000 lbs. of sugar of an excellent quality has been manufactured in Chatsworth, Ill., the past season, demonstrating that beets grown there are as rich in sugar as those produced in the best sugar districts of the Old World.

—The city of San Jose, California, is entirely out of debt, with a surplus fund of $50,000; a school fund interest of nearly $100,000; is laying out and planting with trees, &c., a splendid and spacious public square; has a "foundry" which supplies the city with water, and farmers with their implements, even to steam engines for harvesting, of which thirty were in operation last fall in the valley; a large silk factory has been commenced, and extensive preparations are being made for feeding the worms in its vicinity.

—At a late discussion of the Little Falls, N. Y., Farmers' Club, Mr. Whitman said, I wish to raise a good crop of herds grass, and do not care to sow clover. It is difficult to cure. But when I get ready to raise clover I shall do so, but that will not be until cotton cloth is cheaper. I want a hay stool standing two inches from the ground, and a hay cap. Then I can put my clover upon the stool, and cover it with the hay cap, and let it cure out. In this way the leaves are saved and good hay made.

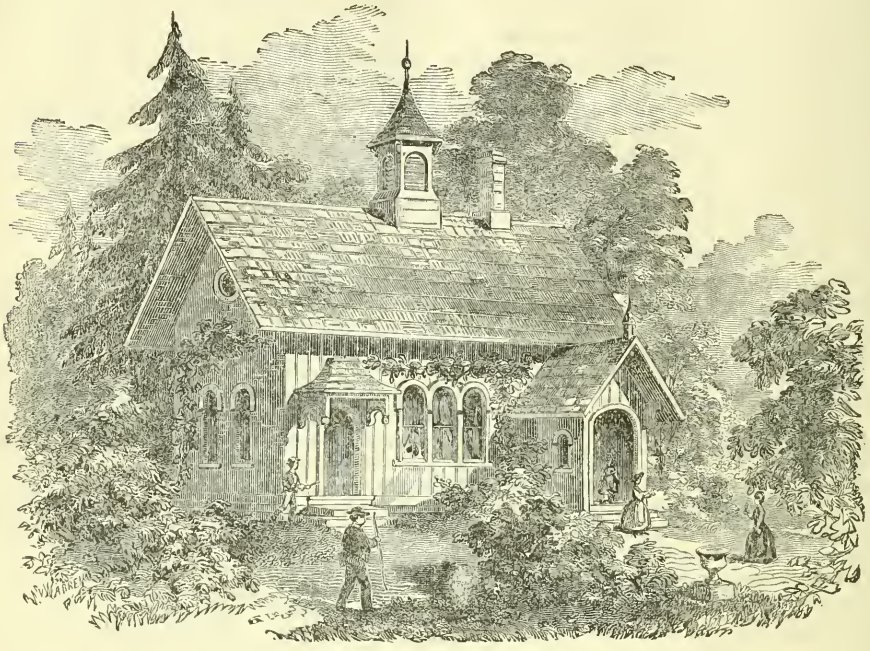
—The Illinois Legislature at its last session passed a law providing that any person bringing into the State seed of the Canada thistle, in the packing of goods, grain or grass seeds, or otherwise, and permitting the same to be disseminated and vegetate, shall be liable to a fine of $100; and any person allowing this thistle to mature and disseminate its seed upon his lands shall be subjected to a penalty of $15.

—Horace Greeley, after visiting Vineland, N. J., at his own expense, made a speech on his return at the American Institute Farmers' Club, in which he said that "any acre of that land requires forty tons of marl, and to this should be added $100 worth of other manures." He complains that he was reported as saying that "little manure is required." The Club appears to be backing down from its endorsement of Vineland.

—The editor of the California *Farmer* had the pleasure recently of shaking the hand of an admiring visitor of California, who had the pleasant remembrance of the warm pressure of the hand of Gen. George Washington. The gentleman's name is J. Harrod, of Dutchess county, N. Y., who at the ripe age of eighty-two years, and in the enjoyment of good health, was on a visit to friends in California.

—The Iowa Falls *Sentinel* learns that provisions are getting very scarce in Hancock and Wright counties. That about one-third of the people of Hancock and Wright counties now lack seed wheat, and a few of them are already living on short rations. The unusual amount of plowing for wheat done last fall indicated an unusual harvest this season, but now for want of seed it will scarcely reach an average. And the hardship is still worse in view of the rapid immigration to that section.

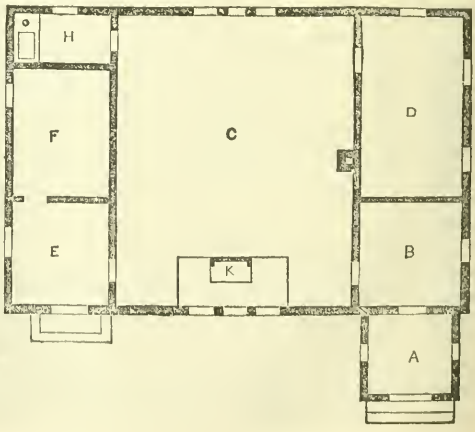
MILK SICKNESS.—*The Medical and Surgical Reporter* states that the affection of cattle known as milk sickness, is caused by eating the white snake root, *Eupatorium Ageratoides*. This discovery seems to have been made by three separate observers, at about the same time. One of them Mr. William Jerry, of Edwardsville, Ill., in 1860, gathered this plant by mistake for the nettle, and ate it as boiled greens On the day following, he was suddenly seized with violent trembling, prostration, and faintness, and on the next day with vomiting, and violent retching. He did not fully recover in five years, and in the mean time tried the plant on domestic animals with similar results. Dr. Amos Sawyer of Hillsboro, Ill., Mr. R. N. Lee of Nokomis, Dr. McPheters of St. Louis, Botanist, and Mr. Enno, chemist, all coincide in the opinion that milk sickness is caused by this hitherto unsuspected plant, which animals are said to like when it is in bloom.



A DISTRICT SCHOOL HOUSE.

Evidences of a growing taste for the pleasant and beautiful are to be seen in the architecture and surroundings of modern-built residences throughout New England. And although the bald, cheerless, and "out-of-door" aspect of many a school-house provokes the remark that "it is the worst looking building in the whole neighborhood," there is now and then one which shows that a spirit of improvement is at work which shall make these primary "agricultural colleges" attractive rather than repulsive to the Young America for whom they are provided. Indeed so great has been the change in the school house and in the system of instruction of our rural districts, that parents have found of late much less necessity for "driving" their children to school than formerly. For the purpose of aiding those neighborhoods who desire that the first impressions of the school should be pleasant to their children, we publish the accompanying plan and perspective view of a school house, designed by Geo. E. Harney, for our columns. The engravings need little description. The perspective view shows the style of the exterior. The plan shows the position and relative size of the rooms.

A is an open porch, shielding the entrance to the girls' apartment, B; C is the school room; D is a recitation room; E, the boys' entry; F, woodroom; H, wash and pump room; K, the teacher's desk.



For the New England Farmer.

FARM OF EBENEZER RICHARDSON.

Having been very much pleased by what I saw and heard during a late visit to the town of Pepperell, and especially to the farm of Ebenezer Richardson, I think the readers of the FARMER will thank me for a brief notice of this town, of this farm, and of this farmer.

Pepperell is naturally one of the most beautiful towns in Middlesex county, Mass. It is situated on the Nashua river, and on the Wocester and Nashua railroad, thirty-seven miles north-west of Boston. The surface consists of large swells, and the soil is good. Among its beautiful estates are those of the Historian Prescott, now occupied by his son, Mr. Farrar, Mr. Griffin, Mr. Belcher, Mr. George T. Bancroft, and others.

But as an illustration of practical and profitable farming,—of what may be done with our "worn out" New England farms by young men with no other means than health, industry, and an agricultural education—I propose to confine my remarks at this time to the farm of Mr. Ebenezer Richardson, which consists of some 200 acres, and which he purchased about forty years ago.

It was previously owned by Mr. David Shedd, who kept for a time about 40 head of cattle. After his death the farm was occupied by his widow, one son and two grandsons, and by poor management was run down so low as barely to yield enough to keep three cows, one yoke of oxen and a horse. Among the causes of the decline in the farming interests of this town was the introduction of the coopering business, which stripped the town of its best timber and engaged the attention of its most active citizens, especially of its young men, who seemed to prefer this business to out-door work. As this fever subsided, instead of turning their attention to agriculture the young men were disposed to seek their fortune in manufacturing, trade, &c. Mr. Richardson, however, preferred farming, and for fifteen years worked on the farm about eight months a year; going to school or teaching during the winter months, but never receiving, in either capacity, over thirteen dollars per month.

Mr. Richardson purchased the place subject to the encumbrance of the "widow's thirds," four years before he occupied the house, though he cut the hay and managed the farm with a view to its future improvement, so far as he could while working out most of these four years. On coming into full possession he began with four cows and one pair of oxen, in addition to the six head previously kept by the widow.

For the purpose of increasing his manure heap, he kept a good number of swine, and increased his stock of cattle as far as he could, until he was able to keep forty head,—the largest number he has ever owned—usually keeping about thirty, with from eight to twenty-eight swine.

He has tried the Durham, Dutch, Jersey and native, and gives the preference to the Durhams and their grades with the native stock. He has always raised his own cows; believing this the cheapest way of securing those of superior quality for his purpose, which is mainly butter making.

A peat meadow of about 24 acres has been thoroughly reclaimed. Originally it was so soft that a man would be lucky to cross it and not sink up to his waist. The grass was "cotton top," interspersed with flags, such as are used in coopering, and some cranberry vines. The quality of the mud was such that if a load of gravel was carted on in the winter, herdsgrass would spring up the next year, wherever it was spread. On draining this swamp it settled three feet. Twelve acres of it have grown up to wood; before it was drained the pines would grow to the height of a man's shoulder, and then fall down. Twelve acres have been cultivated, and year before last a portion of this produced corn at the rate of about 75 bushels to the acre. In the process of reclaiming this meadow there were on three or four acres about 40 cords to the acre of ash, pine and maple logs dug out,—some of which measured 2 ft. in diameter. The hard wood logs were much decayed. The roots, stumps and logs at the surface were completely rotten. At the depth of four feet the peat is red and hard. Among the curiosities found were perfect leaves of birch, ash and cranberry vines, and one perfect cranberry has been preserved that was found four feet from the surface.

The hay annually cut on this farm is about 70 tons and all of good quality, none being poor meadow.

There are two and a half acres of peach trees in one orchard, five years old; all of which are now in fine condition, and promise to bear abundantly. There are also six acres more set among apple trees in another orchard. All the peach trees on this farm are seedlings,—being a large yellow rare ripe, called the Pepperell peach. Nearly all the apple trees of the several fine orchards on the farm were raised from the seed by Mr. Richardson. There are cherries, pears and other small fruits and grapes.

The buildings on this farm are now comfortable and convenient, and have been built and refitted by Mr. Richardson at an expense equal to the original purchase money of the farm. He has three barns—56 by 40, 40 by 28, 40 by 30—a corn barn, apple house, and cart house, with cellars under all.

A State premium of $100; a first county premium of $25, and a second of $20, by the Middlesex Agricultural Society, have been awarded to Mr. Richardson; besides a first premium of $25 on Reclaimed Peat Meadows,

one of $20 on Apple Orchards, and several smaller ones on grain, fruit, vegetables, &c.

I obtained no statistics as to the annual income of this farm, but it was said to be much larger than that derived from most of the other farms in this neighborhood. It was remarked by an observing townsman that the clear profit realized from this farm was ten times as large as that from some carelessly managed ones in town.

Yet, notwithstanding Mr. Richardson's example the young men of the town are leaving their old homesteads, which are gradually falling into the hands of the more industrious foreign population. And even now it is said there are scarcely more than a dozen American farmers in this beautiful town who devote their whole attention to farming.

Mr. Richardson expressed regret for this growing distaste for agricultural life, and remarked that comparatively few of all his acquaintances who engaged in other pursuits had met with any marked success. W.

HOW TO MAKE GOOD BUTTER.

We copy the following judicious suggestions from the Report of G. Reynolds, chairman of the Committee on Butter, published in the Transactions of the Middlesex, Mass., Agricultural Society, for 1866:—

Whoever will take the trouble to examine the "Transactions of the Middlesex Agricultural Society" for the last ten years, must be struck by the meagre character of many of the reports of the Butter Committees. As a usual thing, beyond the mere statement of the awards, almost nothing has been hazarded either in the way of criticism or suggestion. Your present committee venture to step out of this beaten track, and to say that they do not believe that the premiums are accomplishing the amount and especially the *kind* of good which they ought to accomplish. And they are the more emboldened to do this, when they remember the great agricultural value of the article which they have under consideration. Butter, with the exception of hay and possibly live stock, is the product of the farm which in Massachusetts has the greatest money value. In this respect it is equal or superior to the corn crop, and probably worth more than the oat, barley, wheat, orchard and market-garden crop together. Judging from the past it may be assumed that the yearly product of butter in Massachusetts is from 8,000,000 to 9,000,000 lbs; worth this year at the farmer's door more than $3,000,000, or an average of about $100 to each and every farm in the State. It is evident then that anything which tends to improve the quality or increase the ease and certainty of its production is of vital importance to our farmers. Our system of agricultural premiums ought to do more than reward personal skill. It ought to acquaint us with the principles and methods which are back of that skill, and certainly it should be possible to deduce from the experience and practice of some dozen of the best dairy-women in the county definite ideas and rules about butter-making. Well, we have before us the statements of the methods of more than a dozen of such, and after a repeated and sedulous perusal of them we are unable to say whether the beautiful specimens before us came from "a pure knack" in the individuals of doing about right, or are the results of wise methods faithfully followed. The difficulty is, the requirement of the Society, as interpreted by contributors, does not bring us full and precise statements of the hows and whats and whens of butter-making, from the beginning to the end of the process. And they, above all things, are what we need most to know. Would it not be wiser to give fewer and larger premiums and demand in return more minute accounts? Or else to give an additional premium to whoever should furnish at the same time excellent butter and as excellent a story of how it came to be so good?

The character of the dairy-room and the temperature maintained in it; the number and kind of utensils used; the time which the milk is allowed to stand before skimming; how often the churning takes place; whether the cream and the churn are raised to any special and mutually equal temperature; whether cold water is used at any stage of the work, and if so, when; how much salt is put in, and how and when; whether the butter is worked with the hands, or with a wooden spoon, or with both; the manner in which the stock is kept and fed;—these and many other things, exercise, no doubt, an important influence upon the result. And it would seem as though the statements of the contributors ought to shed a great deal more light on these points than they do; and that good butter-making ought to be less an accidental peculiarity, and more a trade, with definite rules and habits which can be learned and practiced by any body. It would seem as though every good dairy-woman ought to have on these points not only correct instincts but intelligence, and that it is the work of the society to demand and to cultivate this accurate intelligence. It may, indeed, be said, that farming is not in any department an exact science. That is true. But there is no department which so nearly approaches it as that of the dairy. And though your committee, at least the chairman thereof, disclaims any profound insight into the practical details of the work, yet "he guesses" and indeed has it "impressed upon his mind" that nothing pays better in butter-making than to have precise methods and to stick to them; and he hopes that the Society will from year to year grow more and more pressingly curious in its questions until it finds out what these methods are.

As to practical lessons this year; judging

from the specimens exhibited and from the accompanying statements, your committee would say, with diffidence, that it would seem, *first*, that cream which was not allowed to stand at the most over thirty-six hours (in the summer twelve to eighteen hours in most dairy-rooms) made sweeter butter than that which stood longer; *second*, that it was better to churn twice or even three times in a week than once; *third*, that one ounce of salt to a pound of butter meets more nearly the average taste than a larger or smaller quantity; *fourth*, that the quality of the butter is much less dependent upon the character of the feed of the cow than is sometimes supposed. In respect to this last point the statements vary to this extent: "fed on grass entirely," "fed on grass and corn-stalks," "feed, besides usual pasture, a small quantity of green corn fodder and one quart meal daily," "has not had any grain since the 1st of June." Yet there is scarcely an appreciable difference in the butter made under these varying circumstances. From which we deduce the conclusion that the goodness of butter depends far more upon the care with which it is made, and very possibly upon the original butter-making quality of the cow, than upon the nature of the food.

From Harper's New Monthly.

SUGAR-MAKING.

The crocus rose from her snowy bed
As she felt the spring's caresses,
And the willow from her graceful head
Shook out her yellow tresses.

Through the crumbling walls of his icy cell
Stole the brook, a happy rover;
And he made a noise like a silver bell
In running under and over.

The earth was pushing the old dead grass
With lily hand from her bosom,
And the sweet brown buds of the sassafras
Could scarcely hide the blossoms.

And breaking nature's solitude
Came the axe strokes clearly ringing,
For the chopper was busy in the wood
Ere the early birds were singing.

All day the hardy settler, now
At his task, was toiling steady;
His fields were cleared, and his shining plow
Was set by the furrow ready.

And down in the woods, where the sun appeared
Through the naked branches breaking,
His rustic cabin has been reared
For the time of sugar-making.

And now, as about it he came and went,
Cheerfully planning and toiling,
His good child sat there, with eyes intent
On the fire and the kettles boiling.

With the beauty Nature gave as her dower,
And the artless grace she taught her,
The woods could boast no fairer flower
Than Rose, the settler's daughter.

She watched the pleasant fire a-near,
And her father coming and going,
And her thoughts were all as sweet and clear
As the drops from his pail o'erflowing.

For she scarce had dreamed of earthly ills,
And love had never found her;
She lived shut in by pleasant hills
That stood as a guard around her.

And she might have lived the self-same way
Through all the springs to follow,
But for a youth, who came one day
Across her in the hollow.

He did not look like a wicked man,
And yet, when he saw that blossom,
He said, "I will steal this Rose if I can,
And hide it in my bosom."

That he could be tired you had not guessed
Had you seen him lightly walking;
But he must have been, for he stopped to rest
So long that they fell to talking.

Alas! he was athirst, he said,
Yet he feared there was no slaking
The deep and quenchless thirst he had
For a draft beyond his taking.

Then she filled the cup and gave to him,
The settler's blushing daughter;
And he looked at her across the brim
As he slowly drank the water.

And he sighed as he put the cup away,
For lips and soul were drinking:
But what he drew from her eyes that day
Was the sweetest, to his thinking.

I do not know if her love awoke
Before his words awoke it;
If she guessed at his before he spoke,
Or not till he had spoke it.

But howsoe'er she made it known,
And howsoe'er he told her,
Each unto each the heart had shown
When the year was little older.

For oft he came her voice to hear,
And to taste of the sugar water;
And she was a settler's wife next year
Who had been a settler's daughter.

And now their days are fair and fleet
As the days of sugar weather,
While they drink the water, clear and sweet,
Of the cup of life together.

FEVERS AND FRUITS.

Let's have a little talk about orchards and gardens, as life-preservers. Many a farmer thinks he "can't fuss about a garden" with vegetables and small fruits in ample variety, hardly about an orchard, especially beyond apple trees. So he goes on to weightier matters of grain, or stock, or dairy, and eats potatoes, wheat bread, pork and salt beef, all summer long; no fine variety of vegetables, no grateful berries, no luscious peaches or juicy cherries. By October fever comes, or bowel complaints of some kind, or some congestive troubles, most likely. He is laid up, work stops a month, the doctor comes, and he "drags round" all winter, and the doctor's bill drags, too. The poor wife, meanwhile, gets dyspeptic, constipated, has fever, too, perhaps, and she "just crawls round." What's the matter? They don't know, poor souls. Would they build a hot fire in July and shut the doors? Of course not—in their rooms; but they have done just that in their poor stomach. How so? They have been eating, all summer, the heat-producing food, fit for a cold season, but not for a warm one. A Greenlander can eat candles and whale fat, because they create heat.

In January we are up toward Greenland—in climate.

A Hindoo lives on rice, juicy fruits and tropic vegetables, cooling and opening to the system. In July we move toward Hindostan, in a heat almost tropical. Diet must change, too.

Have apples, pears, cherries, &c., from the orchard, every day, of early and late kinds. Let there be plenty of good vegetables, raspberries, strawberries, &c. It takes a little time and trouble, *but it's the cheapest way to pay the doctor's bills.* And, bless your dear souls, *these things taste good!*

You study what feed is good for pigs and cattle. All right; but wife and children are of higher consequence; and it's a shame if, with all our great gifts of intellect and intuition, we do not obey the Divine Laws in our own physical being so well that the doctor shall visit the house less than the horse-doctor goes to the barn. Don't fail of vegetables, berries, and fruits. Try it, and you'll say we haven't told half the truth.—*Rural New Yorker.*

Feed for Horses.—Barley for horses, I think, is about the poorest feed that can be given them. If they are doing nothing, they will fat a little on it; but it is not like that produced by corn. If they are put into work, it will soon wear off. I have been working horses and feeding them on barley, and changed to feeding them on corn; and after the second feed of corn I could see a great change in them. I could see that they felt more like work; they would straighten the traces quicker when spoken to, and they would hold out better through the day. For working horses, I should give corn; and for horses to drive on the road, I should give corn and oats mixed together. If I had not the oats, I should give the corn alone. For a working horse, four quarts twice a day would not hurt him; and by all means I should have it wet.—*Maine Farmer.*

For the New England Farmer.

NATIVE TREES AND SHRUBS

TO TAKE THE PLACE OF THOSE LOST OR DESTROYED.

We are looking for plants to make up for the loss, defacement and bare ugliness often produced by the wanton or thoughtless destruction of the trees and shrubs which grow naturally on sides of the country by-roads and lanes, when left to themselves. To the eye of taste, nothing is more beautiful than this natural border; because nothing else so well protects the road from wind, excessive sunshine and dust, and gives the impression of the highest intelligence in the laying out of these ways, and a feeling of naturalness and retiredness to a person who, for pleasure or on business, has occasion to pass along them.

This process of destruction is still going on. I have just been told that a long, winding, delightful road in a distant part of Brookline, which was formerly most attractive from the abundance of the beautiful, rare, native shrubs, that lined it on both sides, has recently been stripped of all its attractiveness by the wanton destruction of the exquisite borders. And I lately saw evidence, for a great distance along a railway, that this barbarous defacement of nature had been practiced, where it is difficult to conceive of any reason for it. Young trees, —birches, alders, oaks and pines,—and a great variety of beautiful shrubbery, have been cut down this last winter or spring, and the ground where they grew has been burnt over. Whoever did it ought to have belonged to the army of Attila the Hun.

I have spoken, very briefly, of some of the trees most suitable for the purpose of repairing this waste. Many have been entirely omitted; as a description of all,—their nature, economical uses, and the character of their beauty,—would require a volume. There are some, however, not yet mentioned, which must not be omitted. Such are the birches. Four distinct species of this handsome family belong to our woods, and may be found growing along the streams or in the forests of Middlesex; all of them of exceeding gracefulness and beauty: the fragrant Black Birch, the Yellow Birch, with its brilliant silvery bark, the Canoe Birch or true White, and the Grey Birch or smaller White. Another, the Red Birch, also a native of the county, is less known and less beautiful. All of these, though extremely delicate in appearance, are easily transplanted from the forest, are very hardy and rapid growers; and will flourish on the most sterile soils in the most exposed situations.

Of these, the common Grey Birch, or White, is best known and least valued. Many people despise it, merely because it is common. Yet in everything but size, it is so much like the common Birch of England and Scotland, that none but a botanist can point out the difference. Every where in Northern Europe that tree is celebrated for its lightness and airiness, and it is the special ornament and charm of Balmoral, the British Queen's summer residence in Scotland.

Our little Grey Birch, then, *is* very beautiful. The three others are still more so. All are remarkable for the rich colors of their tassels in spring; for the shape and brilliancy of their leaves; for the airy, delicate elegance of their often pensile spray, and for the graceful sweep and motions of the branches and the whole tree when swayed by the wind.

There are also several of the poplars and some of the willows, whose claims to the character of beauty would be readily admitted if they were European or Asiatic, and very difficult of cultivation.

I shall recommend only one tree more. This is the Wild Black Cherry Tree, which to the excellent qualities of each of the other trees, adds two of its own. It often springs up of itself, and grows everywhere readily

and rapidly. It blossoms early, and bears abundantly fruit agreeable to the taste, and furnishing the best native remedy known for autumnal diseases. Its leaves, the reddish-brown color of its branches and its shadiness, make it always a beautiful tree; and it is such a favorite with caterpillars that it attracts them from the trees of the orchard. *It does not create caterpillars*, it only draws them away from other trees, and thus very considerably lessens the labor of those who are careful to destroy the caterpillars' nests when they first appear, as the greater part of them will always be found on these wild cherry trees.

Few persons are aware of the great number and variety, and singular beauty of the shrubs, under shrubs and climbers, that grow naturally along the borders or in the openings of the primeval forests in every State of New England. There are ten or eleven whortleberry bushes,—huckleberries or blueberries,—from four inches to ten feet in height, with delicate, pearly blossoms, bright handsome, often perennial leaves, and, in most instances, some of these clothe the ground under the pine woods with delicious fruit and a carpet of rich colors. Many of these would be worth cultivating if it were only for the beauty of their flowers and foliage. For their fruit they have already been recommended.

The American Rhododendron; the two species of Azalea; the Rhodora; the three Kalmias,—the mountain Laurel, the Lamb-kill and the Glaucous,—with the Ledum, all natives of Massachusetts, constitute a family which, in beauty of flower and of foliage, does not yield to any family in the temperate zones. Most of them are known and cultivated, and are objects of admiration in the "American gardens" in Europe, as they are, in a lower degree, in this country. Nobody knows of more beautiful flowering shrubs than the Kalmias; why should they not be brought near the homes of all sensible people, who desire that their children should grow up with a taste for the beautiful in nature? The native Spireas,—Meadow Sweet and Steeple Bush—are as valuable as are any of the foreign species which are much sought for.

Seven or eight species of Viburnum,—the Hobble bush, Cranberry tree, Arrow wood, of several sorts, the Sheepberry, the Mayberry Tree, the Withe-Rod, are all native and all beautiful for their flowers and for their leaves.

It was the loss of some fine specimens of one or two of these plants which made me regret particularly the destruction of the road-side beauties on the Worcester Turnpike. I know not now where to find, growing wild, within the distance of an afternoon's drive, the Hobble bush, Viburnum Lantanoides, with its beautiful flowers, its dark crimson berries, and its exceedingly rich leaves.

Of the Cornels or Dogwood Family, much resembling the Viburnums, there are six species of delicate looking shrubs, from the Cornus Florida,—Flowering Dogwood,—making so fine a show in flower and in fruit, and often rising to more than twenty feet in height, through the Round-leaved, the Red Osier, the Panicled, the Alternate leaved, down to the delicate Silky Cornel, or Kinnikinic, and the pretty little Bunch Berry or Dwarf Cornel Berry. All these are deserving of cultivation, and, when once planted, will need little care; some of them propagating themselves rapidly by suckers.

The Roses commend themselves. We have found growing, as if wild, three of which are natives, the Early Wild Rose, flowering in May and June; the Swamp Rose, in August; the Shining Rose, remarkable for its rich, dark colored, shining leaves; and the Sweet Briar, very beautiful both in flower and in fruit, and extremely well suited to form a hedge.

But for this purpose, we have, also growing wild, besides the Buckthorn and Prickly Ash, four species of thorn,—the Cockspur, the most beautiful of all, the Scarlet-fruited, the Pear-leaved, and the Dotted-fruited, besides the Hawthorn of Europe, so extensively introduced. All these make very handsome little trees, when growing singly, and are particularly fit to be so treated. More beautiful than them all, is the Small Magnolia,—the Glauca,—which may be cultivated without difficulty. The Bladder-nut is a handsome native, striking from its leaves and curious inflated seed vessel.

The Mountain Ash is too well known to need to be mentioned. But the Shad Bush, or Wild Sugar Pear, ought to be pointed out and planted for its beauty and its fruit, as ought the Beach Plum and the Canada Plum. Three or four native species of the Sumach are conspicuous for the richness of their foliage and their fruit, and are very hardy. Two others, wonderfully beautiful, one of them a climber, must be avoided on account of their poisonous qualities.

But we have, to take their places, several plants originally, like ourselves, foreign, but now completely naturalized. Such are the Privet, the Virginia Fringe Tree and the two Lilacs, the common and the Persian.

Of native climbing plants, we have some of the most beautiful that are anywhere to be found; all of them hardy and easily grown. Among these, one of the most deserving of notice is the Roxbury Wax-work, or Staff Tree. Climbing upon a wall, a trellis, or the trunk of a tree, it has, with its opening, orange colored pods and scarlet seeds, a fine picturesque effect. The Virginia Creeper is too well known to need to be recommended. It is here and in foreign lands very extensively cultivated, and speaks for itself on the walls of most of our churches, and as an ornament to many private houses.

We do not make sufficient use of our native grape vines. They are a beautiful covering

for a stone wall or a fence; take up no room, and are of great value. Four species are found in Massachusetts, some varieties of which produce delicious fruit, and the finest of all of them may be converted into excellent jam or marmalade, a most agreeable addition to a breakfast or a dinner table.

All the plants,—trees, shrubs, undershrubs and climbers—that I have recommended, grow from seed. It is only necessary to find out the proper time to sow the seed, and the kind of protection the seed requires. This is to be discovered in every case by studying attentively, in its natural habitation, the plant in question, and finding out the season when the seed is ripe and how it sows itself,—on the bare earth, or among bushes, or under leaves, decayed or just fallen. G. B. E.

Boston, May, 1867.

For the New England Farmer.

LITTLETON, MIDDLESEX CO., MASS.

This town, situated on the Fitchburg railroad, twenty-six miles from Boston and twelve from Lowell, is of small extent in territory and contains but a little more than one thousand inhabitants. Its surface is diversified with hills and valleys, and contains some beautiful ponds. The soil is generally a rich loam, with subsoil of gravel and clay, and produces excellent crops of grass, grain and fruit.

The business of the inhabitants is almost exclusively farming; and yet, considering its extent and population, it is one of the most wealthy and flourishing towns in the State. The taxable property amounts to over six hundred thousand dollars, or about one hundred dollars to every man, woman and child. Its wealth is very evenly distributed; there being few who are worth more than ten or twelve thousand dollars, and few who have not a competency. This town expended money liberally and furnished men promptly during the war, and in six months after its close it did not owe a dollar.

There are many young farmers in this place whose public spirit and improvements are most commendable. We think the estate of J. A. HARWOOD, Esq., in the southerly part of Littleton, is one especially deserving of notice. It contains 200 acres, lying nearly in a square, and has been in possession of the Harwood family for five generations. The original proprietor, who came from England, first settled in Concord, Mass., but shortly afterwards removed here.

When the present owner came in possession of the farm, fourteen years ago, several of the fields, which now add much to the beauty of the estate, and are among the most profitable, produced very little. Just across the road which passes in front of the buildings is a fine orchard containing ten acres. Two acres of this lot nearest the road were set out, twenty years ago, by Col. Nahum Harwood, the father of the present proprietor. The other eight acres were at this time a pasture, producing very little feed; much of it was covered with brush and moss; and that part of it most conspicuous to the road and buildings, being a steep hill, considered nearly worthless for cultivation. When Mr. Harwood began to tear up this hill some of his neighbors thought he was going too fast. But the result speaks for itself. The trees are in a very thrifty condition and bear evidence of judicious management. The whole is now a profitable field, and a beautiful orchard. Separating the two acres first planted from the eight planted fourteen years ago, there is a run which was formerly very wet throughout the year. This has been drained by the present owner and produces large crops of grass of excellent quality. On the whole farm there are one thousand apple trees, some of which have been set over fifty years, and have been very profitable.

By the roadside is a fine peach orchard of six acres, containing the best early and late varieties, which are now just coming into bearing condition. The land occupied by this orchard was likewise a pasture, badly worn out, and a very uninviting field for cultivation. The change made here has added greatly to the appearance of the farm. The cultivated crops have paid for the labor, and there is every prospect that the peach trees will bring a handsome return. Mr. Harwood has full faith in the profitableness of fruit-raising, and says that he would as soon set a peach or an apple-orchard to-day as ever.

Another improvement is a reclaimed meadow of about eight acres. The mud is deep on a large part of it. Before it was drained, cattle could not go on to it. The grass was so poor that, for one or two years, the growth on about five acres was sold standing for five dollars. A portion of this has been improved yearly by Mr. Harwood, until now the last remaining part has been dressed. The method of reclaiming has been to spread on gravel enough to cover the grass thoroughly; then a coat of horse manure without plowing, or sowing any grass seed. A crop of weeds is obtained the first year, but after that good herds grass comes in; which, when ready for the mowing machine is as high as the horses' backs. Mr. Harwood says that the crop will average four tons strong to the acre, though he never cuts a second crop. This meadow is dressed every other year with a compost of horse-manure and mud. The prevailing idea, that mud is not a suitable dressing for a meadow is regarded as erroneous by Mr. Harwood.

About eight acres of corn fodder were raised last year, mostly in the apple orchards, requiring but little labor, as managed. After planting time, the land was plowed, the corn sown broadcast and harrowed in. It was cut in the last of September, bound, stooked, and left to stand from one to two months until thoroughly dried. It was then put in the barn and packed.

A little salt does not hurt it. The estimated crop, when dried, was twenty-five tons, for which Mr. H. was offered $12 per ton, at the barn. Mr. Harwood has some of this in his barn now, and his cattle consider it a luxury. He thinks that it does not exhaust the soil more than a crop of potatoes; and believes that no man who will cultivate this crop need complain that he cannot fill his barn or keep his stock for want of food.

The mansion house on this estate is a commodious building, pleasantly situated and shaded by beautiful elms. There are also two tenement houses in which the help on the farm reside and board themselves. The plan of having the employees of the farm board themselves, Mr. Harwood regards as much the best. It is cheaper for the employer and more satisfactory to the hired hands; while it greatly relieves the domestic cares and labors. He has been very fortunate in securing the assistance of good hands on his farm.

The present stock on the farm is about thirty head of horned cattle, six horses and several swine. Forty head are wintered and hay, &c., enough cut for them. Formerly the stock was thirteen cows, one pair of oxen and a horse. The barn is a fine building 100 by 40 feet, with wing 40 feet; under the barn there is a very good cellar, nine feet in depth, and box stalls in the wing. Formerly the barn was 100 by 28 feet, with no cellar. There is also good running water in the yard. Connected with the barn is a henery, 12 by 12 feet, two stories, wi h yard enclosed by a high fence. This is entirely under the care of Mr. Harwood's son, twelve years of age, who purchases the food, sells the products, and keeps an account of the expenditures and income. I learn from him that he has made $15 net profit from twelve hens (all pure Brahmas) during the last eleven months.

A great quantity of muck is used on this farm. Six hundred horse cart-loads of compost manure have been carted out from the cellar since August last.

Thoroughbred Short Horns.

Mr. Harwood makes a specialty of raising thoroughbred Short Horn cattle. He was among the pioneers in this business in this vicinity, having introduced, several years ago, the first Short Horn Bull into his native town. He considers the thoroughbred Short-Horns more docile, greater milkers, finer formed and much superior to any breed that we have. He believes the Durhams will live and thrive where the native or any other breed will.

There are several other farms in this town that I hope to have an opportunity to give you some account of. W.

May 7, 1867.

Prevention and Cure of Lice.—It is well known that cattle are not affected with lice in the summer season, when lying upon the ground, and frequently pawing in the dirt; while bulls that are always pawing in the ground and sand are very rarely troubled with the pest. This fact confirms the utility of dirt or sand. Every farmer or cattle keeper should provide an ample supply of fine sand in season to have it thoroughly dry before freezing weather, and place it in some dry and convenient spot. and whenever the stables are cleaned, sprinkle the floors with a few shovelfuls. The dry sand will work its way among the hairs of the animals, proving a certain preventive of vermin, and even driving them away, or destroying them after they have made lodgment. Sand will also be valuable for absorbing the liquid, and a safeguard against slippery floors. We have tried sand, and know its efficacy. When cattle are badly afflicted, it may be sometimes necessary for their speedy removal, to wash the animal with a decoction of tobacco (not too strong) boiled in chamber ley; or by applying lard upon the affected parts. Unguentum, and like violent poisons, are dangerous, and should be avoided; but usually will effect a cure. It may be necessary sometimes to sprinkle a little dry sand along the back of the animal. Sand is cheap and safe. Try it.—*Horace Thayer, in American Farmer.*

Rules for Selling Wool.—At the late Fair at Auburn, N. Y., one evening was devoted to the discussion of the proper preparation and rules for selling wool. The leading sheep breeders of Vermont and of New York were present. Resolutions were adopted, expressing a preference for the plan of disposing of wool in the unwashed state, but leaving wool growers to consult their own convenience as to washing; against all uniform and arbitrary rules of deduction; against combinations of buyers, and in favor of a just discrimination in favor of superior quality and condition, on the part of buyers.

Cows and Sheep.—These animals should never be pastured together. As the latter are astir early in the morning, they generally succeed in appeasing their appetite before the cows that occupy the pasture with them during the daytime are admitted, and usually destroy much more herbage than they consume. No animal will partake of grass upon which a sheep has lain, or even trod; there is a peculiar *aroma* characteristic of these animals which is offensive to cattle. It is far better to pasture every description of animal by itself, than to put them promiscuously together, as is frequently done.

THE GLOUT MORCEAU PEAR.

(Pronounced *Gloo-mor-so.*)

The above cut is a remarkably exact representation, as to size, form and general appearance, of one of the specimens of this favorite pear, which were exhibited at the Cambridge Fruit Preserving House, May 20th, and which we have kept in our desk till to-day, May 25, as advised by Mr. Hovey, to "ripen up." On testing it we find it quite fresh, juicy, and not at all "bad to take." A December pear hardly ripe enough for the table in the latter part of the succeeding May, is one of the wonderful results of science applied to the practical management of farm and garden products.

The Glout Morceau is universally admitted to be one of the most delicious of foreign winter pears; being hardy and productive. The tree is spreading and declining in habit, having dark olive shoots, with wavy leaves. The fruit is in perfection in December, or first of January. Mr. Downing describes the fruit as "rather large, varying in form, but usually obtuse-oval, and wider towards the stalk than Beurre d'Aremberg. Skin smooth, thin, pale, greenish-yellow, marked with small green dots, and sometimes with thin patches of greenish-brown. Stalk rather slender and straight, an inch or more long, planted in a small, regular cavity. Calyx usually with open divisions, set in a moderate deep basin. Flesh white, fine-grained, and smooth in texture, buttery, very melting, with a rich sugary flavor, with no admixture of acid. December."

EXTRACTS AND REPLIES.

SPECIAL MANURES.

If you will accept of the scribblings of a man of four-score and three years old, and consequently one of the past generation, I will give some of my experience and observation in different manures.

As to yard manures—the great staple—I find that some of the present generation have made great improvements, by the use of barn cellars and composting, while others lose all of one-half in the swamps and the air. I am of the opinion that it is better to put green manure into the ground than on it.

Having been a manufacturer of ivory, I have frequently used its dust during the past sixty years. It is equal to bone dust or superphosphate. Castor pomace, I find, is a strong, quick and excellent manure for a present crop. As to bone dust, I have used it frequently for thirty years. It is an excellent and lasting manure, if rightly managed, and if it contains the original matter of the bone. Bone is nearly half lime, the rest gelatine or an oily, gummy matter, producing ammonia, which is indispensable for the dissolving of the bone. If the gelatine and ammonia are extracted, the rest is no better than oyster shells, and must be treated in the same way. I consider phosphating or powdering needless. I have never found any difficulculty in dissolving bones ground in the common way, if the original matter is in them. I pour them down in a heap, with or without anything with them, in the hot sun, wet them thoroughly, and then cover them with loam or earth two or more inches thick, and let them heat, but not to a dry heat. The whole pile will become a rich manure. I then mix all together and plow or harrow them in. Judge Buel, who in his day was one of most skilful and successful farmers in the State of New York, said in his *Albany Cultivator* that he wanted the coarse part of ground bone no finer than half inch pieces. The fine part would take immediate effect, while the coarse would retain and continue to give out fertility for years. I have found it so myself. Bones, when whole, have a scale on the outside which protects them from decay; but when broken in pieces are excellent for young trees. How such bone flour as will not ferment will answer for diseased cows I cannot say. I have a better remedy; one that I have tried. It improves the flesh, the bone, the milk, the butter, the hair, and saves considerable hay. It is merely to feed them all the spare skim milk, thickened with bran (not grains from the stills,) or the meal from corn and oats; all of which contain bone timber. It is as natural for cattle to gnaw bones and other things, as it is for a horse to gnaw a post that he stands by, or for a man to be gnawing tobacco. A bushel of ashes on our old worn out lands, I find will do as much good as the same quantity of bone dust or superphosphate, but I want something besides ashes in the soil.

Some fifty years ago I bought a tract of land, of which four acres was sown with rye the previous year. The former owner took off only two bushels to the acre! I put on 400 bushels leached ashes, costing twelve dollars per acre, sowed it again with rye and clover in November. The next July I harvested twelve bushels per acre—not a large crop to be sure, but six times as much as the year before. The next year I had a fine crop of clover hay. The third, with some yard manure, a good crop of corn. I could long see the good effects of those ashes.

I should delight to hear the opinion of some of your scientific men as to the use of ammonia in manure and in the soil. Is it not the Frenchman's yeast? the New Jerseyman's secret? or the one thing indispensable to prepare manure and other matter for the food of plants? Does it not penetrate the earth like water, and cause the roots of plants to penetrate to the place from whence it came? Neither bone nor plaster of Paris does any good here spread on grass land, but both are good in compost.

If bone dust does not smell strong of bone; if plaster of Paris, when put in water settles to the bottom; if ashes change the color of water; if lime bites the tongue, or if ground oyster shells settle to the bottom, I reject them. I consider myself responsible for what I write and give my name.

Deep River, Ct., 1867. PHINEAS PRATT.

DRESSING LAND WITH CLAY.

It is very seldom I see anything in your columns relative to the use of clay as a dressing for various soils. Having had some experience during the past half dozen years, I would say that I consider it valuable on all soils, except those which are very wet and heavy, or those that already contain enough of the article. To those who can get it by drawing not more than half a mile, I would say, procure a few loads and note the results for two, three and four years after the application.

As the best method of applying clay, I recommend to draw it in the fall and drop it in heaps, as you would manure, the more the better. By the action of frost through the winter it is pulverized so as to be easily spread. Or if drawn in the spring or summer, the sun and rains for a few months will produce nearly the same effect. In either case, spread and harrow well.

If this meets the eye of any one who has had any experience in this direction, I would be happy to hear of that experience through the columns of the FARMER, as I understand the "exchange of ideas," &c., to be a leading object of an agricultural paper. He who keeps his experience to himself violates the spirit of the injunction to "Do unto others as ye would that they should do to you." Still it is almost impossible for us, uneducated farmers, who work so hard six days in every seven, to do our duty to each other by communicating the results of our practice, by our ungrammatical, laborious and unsatisfactory style of writing. F. A. C. N.

Plymouth, N. H., Feb. 11, 1867.

DISEASE AMONG LAMBS.

We have experienced in this vicinity for the last twenty years or more, at times, among our best shepherds, and also among ordinary shepherds, great difficulty in raising our young lambs. Twenty years ago the present season I had a select flock of thirty ewes that I had collected from such flocks as those of Caleb Dyer of Enfield, N. H., Hon. Wm. Jarvis of Weathersfield, Gibbs Wait of Windsor, Alford Hall of Wallingford and Maj. North of Shoreham, Vt., all blood sheep.

The second season after I purchased them, they were sheltered in a temporary shed, fed at all times in the open air, in rain, snow or sunshine, had a plenty of room for exercise, were in good condition, but not excessively fat. They dropped their lambs in the month of April, some had large bunches in their throats, could hardly stand or breathe, would live a day or two and die. Others were dropped with large fleshy bodies, and their limbs not half matured; were as destitute of strength as a rag, and all such died soon. Out of the thirty ewes I kept nine lambs alive, but proved worthless in the end. I had other flocks of ewes at other barns that experienced none of the difficulties above mentioned. I am told that several shepherds in Addison county are visited with the same calamity this spring. And now, Mr. Editor, and brother shepherds, what is the cause of it?

I have seen enough of its workings among different flocks, and the flocks so variously treated, that I am satisfied that housing, feeding and petting has nothing to do in causing this difficulty. Here is a question for the learned and scientific to meditate upon. What is it that causes this disarangement in the natural production of the ewe, and not in other female animals? Brother shepherds, that have experienced losses of this kind, please communicate your ideas to the public, and perhaps you will spare me the trouble of writing again. J. N. SMITH.

Oak Forest, West Addison, Vt., May 7, 1867.

REMARKS.—We warmly sympathize with brother Smith in his trials. Have had no experience in raising full blood merinos, but have had no similar difficulty with high grades. The subject you introduce is important and we trust will be well-considered and light thrown upon it by breeders.

With Mr. Smith's letter, came two samples of wool; one from a full blood Leicester buck, not yet shorn, who is one year old. The wool is eight and one-half inches long, soft and silky. The other is from a merino buck, three years old, the growth of one year, and from a fleece which weighed twenty-two lbs. It is three inches long, and has a beautiful curl.

TROUBLE WITH COWS AFTER CALVING.

Many cows are rendered nearly worthless by not cleaning well. This they seldom fail to do when at pasture. My practice, therefore, is to feed potatoes, and as much salt as they will eat for three or four weeks before calving, when they are kept up to dry fodder. I also apply some of the first milk to the small of their backs, well rubbed down. With these precautions I seldom have a cow fail to do well. V. M. HUBBARD.

Rochester, Vt., May 12, 1867.

REMARKS.—Another correspondent, "M. Q.," of Warwick, Mass., writes that although some of his neighbors have been much troubled in this way, he has never had a cow that did not do well, nor does he remember that his father ever had one. A neighbor of his who fed a good deal of poor meadow hay but no roots, had eight cows one spring which had to be doctored, and all of them were found to be very costive, and feverish with chills. The members of the Irasburg, Vt., Farmers' Club, and other readers of the FARMER will thank our correspondent for the following detail of the management of his dairy:—

I have been in the habit of feeding oat, barley, and wheat straw to cows when dry, with one peck of turnips or beets daily, which keeps them in a healthy condition. About three weeks before calving I give them good hay with one quart of oat and corn meal, daily. At the time of calving I give them warm mush of oat and rye meal with half an ounce of saltpetre, one teaspoonful cayenne, and my cows never have any chills or milk fever, which are so common.

CURCULIO.

Is there any way to stop the most fatal depredations of these insects? They have become so numerous, that I seriously contemplate cutting down my orchard unless some remedy can be found. I believe there is no hope of his leaving our orchards, like the canker worm, and most other insects, even for a short period. They have been steadily increasing in my orchard for twenty years, till not one apple escapes their sting, and I have seen a dozen marks on a single fruit. I shall try the sawdust this year and keep off all the creeping things, but as the curculio can readily fly, I have but little hope of success. Who can tell how to stop or destroy the curculio in any way or manner possible? THOMAS ELLIS.

Rochester, Mass. Feb. 25, 1867.

REMARKS.—Catching them by jarring upon a sheet and grinding them to powder between the fingers, we believe is the best prescription within the knowledge of our scientific educators. Notwithstanding the wide scope of the investigations of our entomologists we are still wofully ignorant of the tactics of this band of guerrillas. Who will track them to their winter quarters? Perhaps they may be caught napping. Wide awake, they are hard customers.

KEEPING OFF THE CROWS.

One or two articles have appeared in the FARMER within the past year commending very highly the tarring of seed corn, in which opinion we should have fully concurred from the occasional use we have made of it previous to the last season.

We planted a three acre lot in an out of the way place, a favorite haunt of these black pests, and thinking to make about a sure thing of it had the seed tarred before planting. We expected the crows would try the corn, but were disappointed to find that the black varmints did not leave off trying it. Some one also recommended deep covering. Now as if to have revenge on us for spoiling the corn for their eating, these scamps went through a large part of the field occasionally boring down with their bills, as they are wont to do, but in most cases only pulling up the young blades of corn. We replanted the lot after being thus badly damaged, and used lines, which the crows, though very numerous, seemed to respect. We have used lines many years as a protection, and always so far with success. Though we should scarcely credit the fact, if we had not proved it by experiment. R.

Stoughton, Mass., May, 1867.

RAISING LAMBS.

I wrote to the FARMER last year, in relation to my poor luck in raising lambs, and promised to do the same this year. Last year, and two years ago, I used the same buck, and lost one half or more of my lambs. The first year I fed no grain; the second year I fed grain, and my ewes had milk enough and owned their lambs well. This year I used a different buck. My sheep look well, and now I have forty-five lambs and have lost six. I thought my better success was in consequence of the change of the buck, but some of my neighbors ascribed it to one thing, and some to another. The man who is raising lambs from the buck that I used the two first years, is having even better success than I am. I would like to know where the fault was last year.

What is it that ails lambs that appear lame in their legs, or back, and finally all over, and in two days time get so they cannot get up? The largest and fattest ones in the flock are thus affected.

Roxbury, Vt., May 11, 1867. YOUNG FARMER.

DWARF APPLE TREES.

Some fifteen years ago I became convinced that grafting upon the natural branch was very injurious to the stock, as the heart becomes dead, and

consequently short-lived. I then commenced a new mode of culture by taking trees of two or three years' growth and grafting at the root. Cut off the trunk about an inch from the root and when the scion becomes well started cover with loam and composted manure just above the cleft. The small roots will soon start from the scion and you have a perfect tree of the kind grafted. If you wish to train it as a dwarf, cut back so as to keep the tree well balanced. In this way I have trained some as handsome trees as I ever saw, which prove good bearers with handsome tops, and trunks from two to three feet high. G. L. HIBBARD.

West Randolph, Vt., May, 1867.

COCKS AND HENS—KEEPING EGGS.

Will you or some of your correspondents inform me whether one cock is sufficient for fifty hens? How long can eggs be kept safely before setting?

I have kept fifty hens (Brahmas) during the past winter. They have averaged from twenty-four to twenty-five eggs per day. As the warm weather comes on the yield will be increased. It has cost $4.00 per month to keep the fifty hens. During the past two months I have sold 125 dozen eggs at twenty-eight to thirty cts. per dozen.

Although young, I have faith in Mother Earth, and believe she will richly reward those who earnestly and sensibly seek her favor.

SUBSCRIBER.

North Thetford, Vt., 1867.

REMARKS.—It is generally supposed that there should be one cock to twelve or fifteen hens. Eggs will keep almost any length of time if they are set on end, in an auger hole, and changed once in six or seven days. We have known them to kept perfectly sound for an entire year in this way.

MAPLE SUGAR AND GRIT.

In reply to your correspondent, "G. M. B.," of Worcester, Vt., whose remarks and inquiries in reference to the grit in maple sugar, were published in the FARMER of the 18th inst., I would state, that several years ago, some of this gritty matter, precipitated from concentrated maple syrup, was submitted to Dr. Chester Dewey, then Professor of Chemistry in the Medical College, at Woodstock, Vt., and was found to be, mainly, phosphate of lime.

Whether the potash, sulphur, and other mineral matter, as well as the phosphates, composing the ash of maple wood, are also present in the saccharine sap, in like proportions; or why the phosphates alone are precipitated from the molasses or concentrated syrup, are questions for the analytical chemist. Evidently all the ash or mineral matter of the wood, (excepting, of course, the large proportion of carbon and the small quantity of ammonia, absorbed from the atmosphere,) is derived from the earth. Not the sugary fluid, but only water, and such minerals as water holds in solution, are absorbed by the roots of the maple; while the true sap, containing at first sugar, and at length producing woody fibre, is elaborated by the leaves and other organs of the tree during the year previous to that in which it is drawn from the alburnum or sap-wood by the sugar maker.

In regard to the circulation of the sap, we are sometimes told that it is analogous to the circulation of the blood in animals; that it ascends in the alburnum and descends between the bark and wood. This statement, in some sense true, is, as an explanation, meagre and defective, and leads to erroneous conclusions. There are no tubes or channels in trees analogous to the arteries and veins of animals, but the vegetable fluids pass from one cell to another which is in contact vertically and horizontally; the fluids of different densities of any two cells in contact passing through the porous partitions simultaneously in opposite directions, and commingling in obedience to a law well understood by chemists and physiologists, and which they call *osmose*. According to this theory it is easily understood why the true and denser sap, as well as the weak mineral solution taken up by the roots, is found in the alburnum, and not exclusively between the bark and the wood. Only a slight mechanical circulation takes place in the duramen or heart-wood, it having ceased to perform vegetable functions.

It may be proper to remark that while pure sugar requires only water, or its two elements, and carbon for its formation, the mineral matters found in the sap and sugar, and destined to become ashes in the maple wood, are invariably present, with varying proportions, in the formation of all wood, and are essential, even if they do not enter into such formation as constituent elements, as they do in the formation of other vegetable productions. I. B. HARTWELL.

Wilksonville, Mass., May 20, 1867.

RAISING POTATOES.—WEEDS.

I am greatly obliged to brother "Ned" for informing yourself and others that his method of raising potatoes differs from mine. It is just as I expected. Experience brings wisdom, and I am very glad if he is wiser than his father was. It would not be strange if there were still other methods just as good as his or mine. In regard to planting on stubble, I will say, I have never suffered from wire worms, but came very near having a crop of corn ruined by cut worms on what he terms "sward." We may learn from this that though we are both located in one county, we have to contend with different enemies. But my object in noticing his article is, to suggest that if I wanted a few roots to feed so many cattle and horses, I would, after my land was as nicely prepared as his is for California potatoes, sow an acre or two to carrots, with the expectation of harvesting twenty-five or thirty hundred bushels, and sow the rest with oats or wheat.

One word about weeds, and I am done. He says, the more manure the more weeds. This is not necessarily the case. It is true, weeds or anything else, will grow better on rich land than on poor. It is also too often true that such well-rotted manure as he speaks of harrowing in, is filled with seeds of weeds that grew on it while it was rotting about the barn. Now I venture the assertion that if he, or any one, will wage a war of extermination against every variety of weeds, in all places on the farm, for ten years, he will find them scarce at the end of that time. W. I. SIMONDS.

Roxbury, Vt., May 20, 1867.

POTATO RAISING—AMOUNT OF SEED.

I am pleased to note that opinion and practice are nearly settled, that potatoes yield most when planted from butt-ends, and no more than four stalks in a hill; the hills two feet one way, and wide enough for a cultivator the other. My father and myself have raised on this farm, in forty years, forty thousand bushels of potatoes,—a yield of seven hundred bushels per acre being not uncommon during the first ten years. We found out that we were using too much seed in the following way. My brother and myself, when we were boys, were left one afternoon to finish planting. Finding that we had not seed enough to finish, without going to the house for more, we concluded to "extend" what we had. So we cut up what we had in the field twice as fine as usual, and finished

out with about half the accustomed amount, and kept our own counsels. When we approached this part of the field at harvest, my brother and myself supposed the yield would be in proportion to the seed. When the potatoes were laid out to the sun to dry, by the side of those from the other rows, my father's eyes stared about in wonder at seeing a much larger and finer yield here, than elsewhere. Our confession disclosed a double secret,—the special fact, and what we regarded ever after as the general law as to this vegetable.

By the way, I planted a single peach blow from Buffalo, N. Y., last year, and raised eighty—only three large enough to cook. The vines grew to the length of twelve feet, and were there stopped by a frost.

The old Carters, in their prime, were the heaviest and most nutritious for man or beast that we have ever raised. C. N. ANDRUS.

Chelsea, Vt., May 20, 1867.

TROUBLE WITH COWS.

I had a cow that did not clean after calving,—she lost her appetite, and in a short time she got so weak she could not get up. After trying various things, I took a tablespoonful of rosin, pounded fine, and mixing it with a little rye dough, formed it into a ball or pill. I made three such, and put them down her throat with my hand; the next day, as many more. The following day she was on her feet, with quite a good appetite. After regaining her flesh, she did as well that season as usual. Give a cow what oats she will eat; it is about a sure cure. A SUBSCRIBER.

Swanzey, N. H., May 21, 1867.

REMARKS.—A Maine correspondent thinks the majority of the Irasburg Club were correct in the idea of the importance of the cows being in a thrifty condition at the time of calving. He feeds meal for three weeks, and has no trouble.

KILLING BUSHES.

Salt won't do it. Something might be done in the way of reducing them by mowing them off in "the old of the moon in August." We say this at the risk, perhaps, of appearing extremely stupid, as some of our agricultural editors know the moon has nothing to with the weather nor anything else in particular;—one of whom once proved the fact to a demonstration, by citing its great distance from the earth. We have tried cutting, as here recommended—and without troubling to inquire whether the crescent had or had not anything to do with it; we believe it to be the best time to cut bushes. If not too large, gather them with a stout rake into piles for the barn-yard and hog-house. You will find no trouble in working them in the spring. They are worth much more than the cost of cutting and gathering. After this, where there is not too many stones, a field is easily subdued with a plow and four cattle. Sow to rye, or plant with potatoes. R.

Stoughton, Mass., May, 1867.

APPLE TREE BORERS.

Will you please remind your readers of the method recommended by you last year to protect trees from the attacks of the borer, viz: heap up earth around the trunks to the height of about a foot, any time before the first of July, and let it remain until after the fly has ceased to work in August. When the hurry of hay time is over, brush away the earth. If the borer fly has laid any eggs or if any eggs are hatched, they can be readily seen and removed from the bark without the least injury to the tree. This process will not take over five minutes' time to a tree; and, by preventing the borers from entering so low that they cannot be found, will afford a certain protection.

Ashby, Mass., May 18, 1867. A SUBSCRIBER.

CABBAGE AND CUT-WORMS.

A very simple process recommended in your paper last year, for the protection of cabbage plants after they are set out, has done so much good among those of my acquaintance who have practiced it, and there are yet so many more who either do not read the FARMER or have overlooked this remedy, and still suffer by the destruction of their plants by cut-worms, that I think it would be a public benefit if you would insert it again. It is simply to wrap a piece of paper or bark around the stem when it is set out.

Boxboro', Mass., May, 1867. A SUBSCRIBER.

RAISING CRANBERRIES IN NEW HAMPSHIRE.

I see in your last paper the inquiry, whether cranberries can be raised in Cheshire County, successfully, and your reply that flowage is necessary. Six years ago Mr. Nathaniel Narramore, of this village, fenced a part of the side of a road near his house, by setting some posts about three feet high and putting on one rail on the top. The land so fenced is five rods and nine links long, and nine and a half links wide. He set this out to cranberries, which he got in his wheelbarrow from beside a pond about a mile off. He then covered them with waste tan bark, about three inches deep, and on the third year he picked three and a half bushels of cranberries from the lot, and has picked from three to four bushels each year since. I think the appearance of the road is improved by substituting the cranberry patch for the bushes usually allowed to grow in such places, and certainly the profit from labor spent on it, is more than farmers usually realize in this town. The same gentleman has about two acres of land about his house from which he sells more in value than many of our farmers get from twenty-five.

DANIEL R. SPAULDING.

Richmond, N. H., May 20, 1867.

BUGS ON APPLE BUDS.

Some days since we received a letter enclosing a twig of an apple tree, the buds of which were nearly covered by a small bug. We put the letter in our pocket for the purpose of consulting our Natural History adviser, and lost it. We could not well satisfy ourselves from an observation with the naked eye, but we think they are the Aphis, of which a correspondent furnishes some account in another column. Still it may be a new pest. We find in the Iowa *Homestead* the following notice of an insect that was lately discovered on the blossom buds of apple trees in Des Moines and other places in Iowa:—

We have a new pest for the apple trees this spring; blossom buds are overspread with black lice. They are smaller than the hen louse, but what their mission is no one seems to know, and time will have to solve the question. A microscopic examination makes them about the size of a common house-fly, and about the same shape. The bark of the branches is overspread with what appears to the unaided eye, a fuzzy, dark brown net-work, holding in its meshes innumerable black specks, which, on examination under the glass, are found to be the abode of the unhatched insect. To the casual observer, this covering of the bark

would scarcely be noticed. We have never seen the like before. We would advise dusting the trees with wood ashes when wet with rain or dew. We propose to keep an eye on this new visitor and see what comes of it.

TO PREVENT BEE-ROBBING.

Can you or any of your subscribers inform me the best method to protect bees from being robbed, and to stop it when commenced. My neighbors' bees commenced robbing mine last fall; and before I discovered it they had totally destroyed three swarms. I then stopped up my hives, which proved the means of smothering three more swarms. By these means my number was reduced to one-half of what I intended to winter.

I winter my bees in my cellar, which is a very dry one, and my hives come out nearly as heavy as when put in. I never lose any, nor have the comb get mouldy. H. T. BERRY.

South Bombay, N. Y., May 10, 1867.

REMARKS.—Bees are sometimes excited to robbery by careless feeding, or by exposing a dish or a comb of honey; but generally they resort to this means of supplying their storehouses by their inability of finding flowers in early spring or late fall—often at the close of the buckwheat season. On discovering signs of robbery, it is usual to reduce the entrances to the hives, that the occupants may more readily defend their premises and property. Mr. Quimby says, "A great many remedies for this evil have been recommended, which are as bad as the evil itself, and often the cause of it. The most fatal is to move the hive a few rods; another, to entirely close it, which may smother the bees. I would recommend removing the weak hive, on the morning after the attack, to the cellar, or some dark, cool place, until two or three warm days have passed, and the search has been abandoned. When a hive has been removed, if the one on the next stand is weak, it is better to take that in also, to be returned as soon as the robbers will allow it. If a second attack is made, put them in again, or if practicable, remove them a mile or two, out of their knowledge of country; they would then lose no time from labor. Another method is, when you are *sure* a stock is being robbed, to close the hive at a time when there are as many plunderers inside as possible, (wire-cloth, or something that will admit air, and confine the bees, is necessary,) and carry in as before directed, for two or three days, when they may be set out again. The strange bees thus enclosed will join the weak family, and will be as eager to defend what is now *their* treasure, as they were before to carry it off."

PRUNING APPLE TREES.

A correspondent who signs "Down in Maine," inquires, when is the best time to trim apple trees, spring or fall; and if spring, is it too late?

REMARKS.—Any time when the tree is not growing vigorously. The *best* time in the year is undoubtedly the middle of June. The tree has then got through what is called "the first growth," the thin sap has been elaborated into a thick, gummy substance, and is returning down the outside of the branches and stem of the tree to increase their diameter. If the tree is cut when this is the case sap will not flow out in ten cases in a thousand. When the tree commences growing again, the edges of the wound will soon be surrounded by a healthy rim of green bark, which will cover the cut place entirely in two years, if it is not more than a half inch to one inch across it.

There are some disadvantages in pruning in June, such as much work to be done, and crops covering the ground. The autumn, soon after the leaves have fallen from the trees, is also a proper time to prune apple trees.

HORSE HOE.—BOILER.—OX SCRAPER.

I have bought three useful articles the past year, and am so well pleased that I regret that I did so long without them.

Your advertisement and endorsement of "*Nourse's Horse Hoe*" led me to send for one last June. It is all that can be asked for, and will soon pay for itself, if kept going. I would not part with mine for a good sum, if I could not get another.

My next purchase was a *Mott's Agricultural Boiler*. I cook food for my swine right by their pens, and plague the "folks in the house" no more, by using the house boiler and spilling swill on the floor. At this time my Mott boiler is filled with coal tar and slate flour, ready to be put on a roof to-morrow.

My last purchase is a *cast-iron ox or horse scraper*. It works first rate. I have dug a cellar with it. I use it several times a week. It is handy to level a rough spot or ridge of land. It will speedily gather the remnants of manure in the yard into a snug heap, and move into it fresh material near. My labor is more effective for these additions to my tools. WM. D. BROWN.

Concord, Mass., May 22, 1867.

TRANSPLANTING EVERGREENS.

What is the best time for transplanting evergreens, cedar, balsam, spruce, &c.? O. H. T.

Ascutneyville, Vt., 1867.

REMARKS.—June is considered a good time, just as a new growth is starting on the tips of the branches. Great care should be used to keep the surface of the ground around the stem of the tree attached to the roots, and not allow the sun or wind to strike them. The roots of evergreens are succulent and tender, and are easily wilted by exposure to sun and wind. Cover the roots with matting or earth, as they are placed in the wagon to be hauled away.

A SICK SHEEP.

Please inform me what is the matter with a valuable sheep that I have. About the time that I turned her to pasture, her head commenced swelling. In the day time her head swells and in the night it goes down; the swelling begins on her under jaw; she appears well, and eats well. If you can inform me through the FARMER what is the matter with her, and what to do for her, you will greatly oblige a subscriber. H. G. W.

Enfield, May, 1867.

REMARKS.—"Swelled head" is not uncommon among sheep, we believe, but rarely, if ever, assumes the epidemic form. Dr. Randall does not prescribe for it as a distinct disease, but thinks it

one form of *catarrh*. You would do well to separate the affected animal from the flock, and consult the Doctor's book on Sheep Husbandry for a mode of treatment.

HEALTHY LAMBS.

I have thirty-one blood lambs, dropped since the first of February, all smart and healthy. I feed my ewes roots every day through the winter, and a feed of straw every week. I keep salt by them, and part of the time I mix ashes with it. I give them a little hemlock once a month through the winter, and a plenty of exercise in the open air. I think that the great secret of success is to keep the ewes healthy. V. M. H.

Rochester, Vt., May 24, 1867.

Remarks.—We regret that the 26½ lbs. which the fleece of Mr. Hubbard's ram "Romeo" weighed, was printed 21½ lbs. The figure 6 was imperfectly made and mistaken for I.

A YEARLING BULL.—CROPS, &C.

Wm. T. Fiske, of Webster, N. H., has a grade bull that weighed when 13 months and 5 days old, 938 lbs. after he was driven three miles to the scales. The calf was weaned from the cow when less than one week old, and was fed three times a day with what milk the cow gave, after being skimmed, with shorts and green feed, and kept in the barn. As yet but little corn has been planted in this vicinity. Hay is very scarce, and more than was raised last year will be necessary to carry present stock through next winter. In consequence of the high price of flour, there has been more wheat sown in this town this year than usual.

Mast Yard, N. H., May 23, 1867. F.

GRAFTING WAX.

In your valuable paper of May 11, the public are cautioned by a Mr. "C." against using an advertised article, called grafting wax, stating that it kills the bark and permanently injures the tree. We would respectfully request him to inform the public, if he can, of what it is composed, so that it may be avoided. The grafting wax used in this region, for the last fifty years, with good success, is composed of four parts rosin, two parts beeswax, and one of tallow. This is of a very different nature from that which Mr. "C." warns us against, because it is of a very healing nature, when closely and property applied, and never injures a tree.

John King.

Eagle Bridge, N. Y., May 16, 1867.

TO PREVENT BIRDS PULLING CORN.

Take a quantity of corn, soak it until it becomes soft, then string it on horse hair or thread, one kernel to each thread or hair. When your corn is coming up throw this on your field. The birds will pick it up and swallow the corn. The thread or hair will stick in their throats, and in trying to get it out, they will scratch out their eyes. Be careful that your hens do not get at it.

Chepachet, R. I., May 11, 1867. H. Rounds.

THOUGHTS ON FENCING.

Having been a reader of the Farmer for twelve years, I have seen much on the subject of fencing, and would suggest the following plan. On the line of the proposed fence set maple trees about twenty five feet apart, or standard pear trees fifteen feet. Then drive or screw good staples into the trees, and stretch your wires from tree to tree. If you wish for a hedge, set out your thorn, cedar, arbor vitæ, rose, blackberry, raspberry, or grape vines, and you will have not only a fence, but an ornamental, fruitful and flowery hedge.

April 22, 1867. O. H. P.

Remarks.—If friend "O. H. P." will report a fair trial of his plan, we will promise not to prune his communication quite as severely as we have in this case.

GRIT IN MAPLE SUGAR.

I notice in the Farmer of May 18, an inquiry from "G. M. B.," of Worcester, Vt., as to the cause of grit in maple sugar. If he will strain his syrup (warm) through a flannel strainer, he will find all the grit left in the strainer. What this grit is I do not know, but if washed it becomes as white as chalk. W. H. Lyon.

North Craftsbury, Vt., May 22, 1867.

SHOEING SHEEP.

Can you, or any of your correspondents, give me a plain, easy mode of fastening small pieces of wood on the bottom of sheep's feet? One of my neighbors once saw some sheep feeding in a pasture, with little paddles of wood fastened to the bottoms of their feet, but don't remember how they were fastened on. With such shoes as he describes they can't jump or climb a wall.

Mandaville Campbell.

North Turner, Me., 1867.

Remarks.—We cannot, but some of our correspondents probably can, and undoubtedly will.

PROLIFIC SHEEP.—TWIN GOSLINS.

Mr. Daniel B. Smith of this town has seven sheep that dropped fourteen lambs, and one that dropped three. Another neighbor, Mr. W. H. Burleigh, has a sheep that dropped four ram lambs. From the gosling egg noticed in the Farmer, May 4, as weighing ten ounces, two goslings have been hatched, both of which are doing well.

Charles C. Tinkham.

Grafton, N. H., May 20, 1867.

SOAP-SUDS.

The value of soap-suds is known to every gardener, but the supply is not always equal to the demand. Cannot a composition or soap be made of cheap materials, which, when mixed with water, will be profitable and useful for all the purposes for which suds are now used? Why does plaster kill strawberries, as is spoken of in your paper?

A Subscriber.

Deep River, Ct., May 20, 1867.

SHEEP MANURE.

Not having seen any answer to a late inquiry in your valuable paper, for directions for the management of sheep manure, I will give my method: For some time after commencing to keep sheep, I lost much of my manure, although I tried various experiments. I now turn it on the ground where it is made, taking care not to have it more than from four to six inches deep, and when it begins to heat I turn it again, and I have a fine lot of manure for the hill, the next year, as you ever saw

Down in Maine.

SOFT SHELL EGGS.

The favorite remedy, at our house, for this trouble among the poultry has been the "chop-axe." Take off their heads and put them into the pot. This is warranted sure cure; never known

to fail. But if thought too harsh a remedy, a grass and gravel diet might be found to work a cure in a short time. R.

Stoughton, Mass., May, 1867.

POKE ROOT FOR LICE ON CATTLE.

Where this weed grows on the low wet parts of the farm, there is no excuse but laziness for lousy cattle. Boil four quarts of poke roots so as to leave a pailful of liquor, with which wash the animals thoroughly. It is a sure cure.

St. Johnsbury, Vt., May, 1867. O. BROWN.

A GOOD FLEECE.

My buck "Romeo," was sheared April 27th, ten days less than two years old. The fleece was the growth of seven days less than one year, and weighed 21½ lbs. He was sired by C. O. Stowell's old "Golden Fleece," out of a Victor Wright ewe.

V. M. HUBBARD.

Rochester, Vt., May 12, 1867.

REMEDY FOR THE BORER.

Scrape away the earth from the trunk down to where the roots branch out, and apply with a brush a very thin coat of warm petroleum tar, to about six inches of the trunk and to the exposed roots. One quart is sufficient for fifty trees.

Marion, Mass., 1867. C. C. ALLEN.

MY REMEDY FOR COWS SUCKING THEMSELVES.

Besmear the bags and teats with the most offensive grease that can be found about the premises. Do this every morning for a few days, and the cure is effected. W. S.

Athol, Mass., May, 1867.

SALVE FOR SORE TEATS ON COWS.

Take one pound the bark of the bitter-sweet or yellow-root, and half a pound of lard; simmer fifteen minutes; strain and let it cool. Bathe twice a day. H. ROUNDS.

Chepachet, R. I., May 11, 1867.

AGRICULTURAL ITEMS.

—The *Rural World* says that until the 4th of May there was no rain in the vicinity of St. Louis during the entire spring.

—The Fair of the New Hampshire State Agricultural Society is to be held at Nashua, Sept. 10, 11, and 12.

—If you intend to fight the curculios at all this year, don't delay your operations until they have stung nearly every fruit.

—The annual fair of the Indiana State Agricultural Society, will be held at Terre Haute, commencing September 30th.

—Every seed contains three principles, the organ of nourishment, the nascent plant or plumule, and the nascent root or radicle.

—In an article on docking lambs, in the *Mirror and Farmer*, Dr. Boynton recommends searing the bleeding arteries, not the whole stump, with a red hot iron.

—J. Harris says, in his "Walks and Talks," that while it is true that improved breeds of cattle will not do so well on very little food as will the "natives," it is also true that the "natives" will not stand high feeding as well as the improved breeds. Those who want to feed high so as to get a large quantity of rich milk must get cows with a good share of improved blood.

—A farm with shade and fruit trees set around the house, will sell from $200 to $1000 more than if there were none; while the girls will have more beaux, and the boys be less likely to get the mitten.

—For spring wheat, farmers in Minnesota plow the land in the fall, harrow in the seed in the spring, at the rate of two bushels per acre, and generally harvest from twenty to twenty-five bushels per acre.

—A Wisconsin farmer writes to the New York Farmers' Club, that if the spread of the Canada thistle is not checked in its progress it will be but a short time before the producers of wheat will be driven from the great wheat fields of the West as Adam was driven from the garden in the East.

—At a sheep shearing in Hyde Park, Lamoille county, Vt., Messrs. R. R. Wait, of Stowe, L. Grout, of Elmore, O. H. Cook, S. Stone, H. Dodge, and E. V. Hadley, of Morristown, were among the owners of sheep to whom premiums were awarded.

—In the Sciota Valley, Ohio, the land is so rich that for 40 years corn has been grown on the same ground, and yet they who do the work are tenants, and poor. In Northern Ohio, the land is so poor it is constantly kept in grass, and yet they who do the work are the owners, and are rich.

—While admitting the success of pear raising in city and village gardens and other sheltered locations, the *Maine Farmer* speaks discouragingly of attempts that have been made in that State to raise this delicious fruit by ordinary orchard cultivation.

—A correspondent of the *Rural American* recommends the following as a sure cure for lice on cattle: Take one dozen or more good-sized Irish potatoes, pound them fine, then put them into two gallons and a half of water, boil thoroughly, then let it cool, and apply as a wash, to cows, calves, mares and colts, and all other creatures that have lice.

—By planting 15 or 20 common beans in each hill of his vines, a correspondent of the *Country Gentleman* says he protects his plants from the striped bug, which seems to know beans well enough to keep away from them. The beans must be pulled up or broken off as they begin to shade the vines.

—On his return from a late trip through Virginia, the Carolinas, Georgia, Tennessee, Kentucky, &c., Mr. Moore, of the *Rural New Yorker*, says, the crops throughout the South are generally promising, and the people of all classes seem earnestly endeavoring to reconstruct and augment the industry and productiveness of the country.

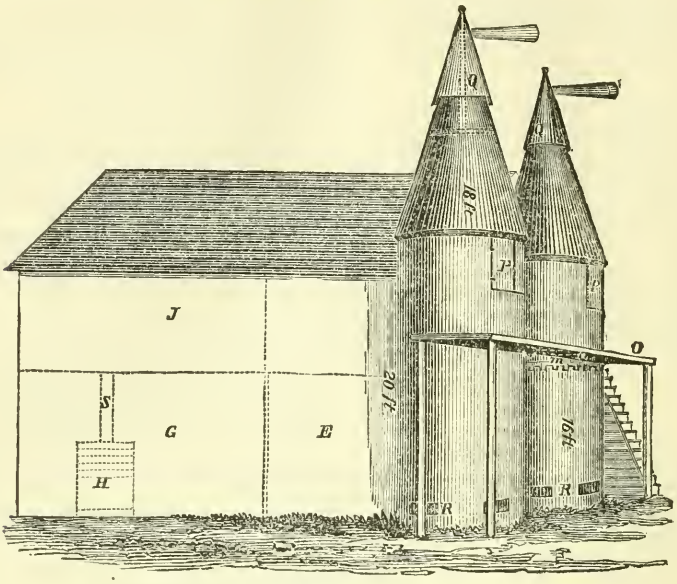


FIG. 9. *Elevation of Double Kiln.*

E, room. *G*, press-room. *H*, press. *J*, store-room. *m*, drying floor. *O*, platform from which to charge the kiln through the doors *P*. *Q*, ventilators or cowls. *R*, lower ventilators. *S*, conductor of cloth to convey hops to press.

CULTIVATION OF HOPS.

Having considered the planting, growth, and harvesting of hops, we now give some directions in regard to

Kiln Drying.

As fast as hops are picked they must be dried. This is an important and delicate process. They may be full grown and well picked, but if poorly dried will prove of little value. There is danger of over-drying and scorching. We saw a specimen of a scorched lot last year which was received on a contract for merchantable hops, and on which a comfortable—to the lawyers—little law-suit was pending. There is also danger of insufficient drying, in consequence of which the hops are liable to be damaged or utterly spoiled. Hence the necessity of nice judgment and practical skill in deciding as to the amount to be applied at once to the dryer, in graduating the heat of the fire, the ventilation of the room, and the exposure of the hops during the whole process of manufacturing the green into the baling article. Mr. Z. E. Jameson, Secretary of the Irasburg Farmer's Club, says that his test of the proper dryness is, when the stem in the middle of the hops will break easily; if it can be twisted and bent, it is not dry enough. Some old wooden building may answer for the hop-house or kiln, but to give an idea of the principles which should be introduced into whatever structure may be used, we copy from Mr. Judd's Practical Hop Culture the annexed cuts and description of a somewhat elaborate structure of a double kiln which may be simplified to suit the means and wants of each individual hop-grower.

The kiln should be built prior to the tenth of September, when, in ordinary seasons, the

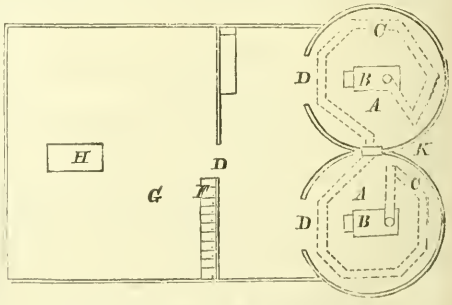


FIG. 10. *Ground Plan of Double Kiln.*

A, stove rooms. *B*, stoves. *C*, pipes. *D*, doors to wood-room. *F*, stairs. *G*, press-room. *H*, press. *K*, chimney.

hops will be in condition to begin harvest. The size will depend upon the number of hops

grown. For a five-acre field, two hundred square feet of surface of drying room will answer. For yards of ten or more acres, two drying-rooms will be found convenient. The hops picked in the forenoon should be put on to dry at noon, and those picked in the afternoon are placed in the kiln at evening. Figs. 9, (at the head of the column,) and 10, with the descriptions, will give an idea of what is needed for a large yard.

The kilns are round in form, and may be constructed of wood or stone. If of wood, a balloon frame will be found most convenient. The floor shown at *m*, Fig. 9, should be fifteen or sixteen feet from the ground. It is generally made of one by one and a half inch strips of boards, set on edge. Over this floor is a cloth, somewhat resembling that used for strainers, hard twisted with small meshes. On the cloth the green hops are deposited to be dried. The kiln, if constructed of wood, should be lathed and plastered, above as well as below the floor. Air-holes are shown at R, which should have a door, so as to be able to close down at pleasure. There are large doors, P, P, into which the hops are thrown from the platform O. A ventilator, Q, is placed at the top of each kiln. The other parts will be understood from the references below the figures. The stoves should be large enough to receive three-foot wood, and the stove-pipe not less than ten inches in diameter, so arranged as to equalize the heat, and dry the hops evenly. The horizontal pipe should be six or eight feet from the kiln-cloth, and extend slightly upward. All dust is to be removed from the cloth daily, and before starting a fire. The pipe should be supported upon standards, with forked iron tops. The utmost precaution should be taken against fire, as the building, during the drying season, will be like a "tinder-box," and it should not be entrusted to a careless hand. The time required for drying a kiln, with the hops say twelve to fifteen inches deep, will be twelve to fourteen hours. To determine when the hop is dry, examine the inside. Three-fourths of all should break or crumble when pressed by the hand. During the drying, it is customary to burn brimstone three or four times; first, when the hops are warmed one-third of the way through, and last when the heat has reached the surface. The amount of sulphur required will depend upon the condition of the hops. If they are rusty, more will be required than at the beginning of picking. The person having charge must determine this matter; from two to three ounces are generally used. Two or three hours before allowing the fire to go down, the hops should be stirred. This is generally done by going through them, taking care to keep the feet under them; then level them off. During this operation the air-holes should be closed. Some turn them over with a shovel, when two-thirds dried. The hops are now ready to be removed from the kiln, but there is no objection to allowing them to remain on the kiln until it is wanted for another lot of green hops. Care should be taken not to break them.

In the same treatise, Mr. Jameson gives directions for building a press for baling; but as ready-made presses, with full directions for using, may be purchased, we omit the details. Hop-Sacking can be procured from merchants, and is known as "Dundee bagging." The size of the bales will be regulated by that of the press; they generally weigh from two hundred to two hundred and fifty pounds.

For several years past the hop crop has been very much injured, and in some cases nearly destroyed by the Hop Louse and other insects. The louse comes early in July, and if not checked increases until it ruins the crop.

CUTTING HAY EARLY.

It is now better understood than formerly that some kinds of hay should be cut early, especially for cows. But in the declaration of new doctrines we are disposed to go to the extreme. Because some grass cut in June or early July, makes better hay, it is not to be assumed that all grass will. Clover, orchard grass and timothy attain their growth and maturity rapidly and early, and very soon, if not cut, lose their good quality; and this is so also of some other kinds of grass growing on rich and warm uplands, and on any highly cultivated land. But there is a great deal of meadow which affords a very superior quality of hay, though cut late in August. This is the case with much of the bottom lands, or river meadows, where the grass does not attain half its growth by the fourth of July, and, if cut so early, would want its superior quality. It dries up rapidly, the juices being only partially developed, and it lacks nutriment. Any one who has had occasion to mow a strip of such grass in the early part of July, and to cut the grass adjoining this strip four weeks later, will be struck with observing the difference, not only in quantity, but in the quality of the two cuttings. There is also a great deal of upland natural meadow, where the grass is of slow growth and late, and where the quality of it for hay improves nearly as long as it continues to grow, retaining its good color and rich aroma quite late in the season. In seasons of low temperature, such meadows will furnish an excellent quality of hay, cut as late as the first of September.—*Country Gentleman.*

HEAVY MERINO FLEECES.—C. N. Hayward of Bridport, Vt., recently sold to L. J. Wright of Weybridge, five ewe tegs which sheared 76½ lbs of wool--the heaviest fleece weighing 17½ lbs.

WHAT TOOLS HAVE DONE FOR AGRICULTURE.

Few farmers, perhaps, have given this matter that careful thought and comparison with past ages, which will enable them to appreciate the immense advantage we possess in the excellent tools that are now used in the cultivation of the soil. Tools and machines are, in principle, the same. When we use an iron bar to move a rock, it is gaining in one way, a power which we gain in another by the use of the derrick. A tool is usually more simple than a machine; it is generally used with the hand, while a machine is frequently moved by animal or steam power. The simpler machines are often merely one or more tools, placed in a frame, and acted upon by a moving power. But neither the tool nor the machine has any force of itself. In one case the force is in the arm, in the other, in the water, the steam, or the animal that turns the wheel.

It is by a combination of different principles that we gain the greatest power, as for instance, in the cider mill, where the use of the lever enables us to gain an immense power; or the screw, which is an inclined plane, winding round the surface of a cylinder, or when the screw is combined with the wheel and axle.

Every farmer who has used a good hay-cutter that has a revolving motion, can appreciate its value when he contrasts it with the tedious labor of chopping hay with a hatchet, on a block, or using a machine with an up and down motion; and so in regard to nearly every tool or machine he uses on the farm.

It would be a source of pleasure and encouragement to any farmer to become more familiar with what science and art has done for him and the world, and especially within the last fifty years. By *science* we mean this,—the *discovering how* a good seed-sower, or mowing-machine may be constructed, and by *art*, how to manufacture the parts and put them together. The first is ascertaining a truth, and the second making that truth available to the world. These terms, therefore, are plain terms, and may be understood by all.

In order, however, that the farmer of the present day may realize the advantages which he possesses over those of any former period in the world's history, he must know something of the condition of those who have preceded him. Let us briefly refer to a few plain facts:

Adam Smith, in his great work, "The Wealth of Nations," says, The property which every man has in his own labor, as it is the original foundation of all other property, so it is the most sacred and inviolable. The patrimony of a poor man lies in the strength and dexterity of his hands; and to hinder him from employing this strength and dexterity in what manner he thinks proper, without injury to his neighbor, is a plain violation of this most sacred property."

A vast number of the cultivators of the soil in Europe, as well as in other parts of the world, and among them our English ancestry, not only were obliged to work without the aid of machines, and with heavy, clumsy and awkward tools, but were continually plundered and oppressed by the government and the landholders.

Before the great charter, King Henry used to seize upon whatever suited his pleasure,—horses, implements, food, any thing that presented itself in the shape of accumulated labor. The husbandry was so imperfect that an unfavorable season for crops was followed by famine. When the ground was too hard, the seed could not be sown for want of the sufficient machine-power of plow and harrow; and when they got a crop, it was thrashed out by cattle at a ruinous loss.

Education was so low, and the principles and relations of things so little understood, that there was the most decided hostility to the introduction of machinery upon the farm or in the work shops. Even as late as 1830, the newspapers of England gave accounts of the destruction of machinery by her agricultural laborers. It was stated that in one district a band of men destroyed all the machinery of many farms, *down even to the common drills.* They could not make up their minds as to the propriety of destroying a horse-churn, and therefore, that machine was passed over.

Historians state that in the reigns of Henry IV. and V. of England, there was plenty of labor to be performed, but the tools were so bad, and the want of agricultural knowledge so universal, that the land was never half cultivated, and therefore all classes were poorly off. They had little produce to exchange for manufactures, and in consequence the laborer was badly clothed, badly lodged, and had a very

indifferent share of the scanty crop which he raised.

The condition of the people must have been poor indeed, in the 14th and 15th centuries. Then there were few glass windows, "for at Alnwick castle, in 1567, the glass was ordered to be taken out and laid up in safety, when the lord was absent!" The people lived mainly upon salt meat, none but the clergy and nobility wore linen, and so careful were those who had it, that night-clothes were never worn! The household furniture among the wealthy families of Colchester, consisted of an occasional bed, a brass pot, a brass cup, a gridiron, and a rug or two, and perhaps a towel. Of chairs and tables we hear nothing. That was in 1301. Queen Elizabeth's palace, had few, if any, glass windows. As late as the reign of Henry VIII. it was said that "the nastiness of the people was the cause of the frequent plagues that destroyed them; that their floors were commonly of clay, strewed with rushes, under which lay unmolested a collection of beer, grease, fragments, bones, spittle, excrements of dogs and cats, and of everything that is nauseous!"

Now, brother farmers, contrast, first, the laws under which they lived, and these under which we live, and then their tools and machinery with ours, and their cabins and wretched clothing and furniture, with those common among us, and you cannot fail to be more contented and happy than ever with your New England homes and farms.

MARKETING WOOL.

After a preamble which sets forth certain "rules" which have been adopted by "Wool Buyers' Conventions," some of which have gone so far as to require an effort to be made to obtain a list of such purchasing agents as disregard them, to the end that they may be discountenanced, and thus thrown out of business,—the following resolutions were adopted by the New York State Sheep Breeders' and Wool Growers' Association, at their Fair at Auburn, May 10th. They were adopted unanimously, after a full discussion, by an assemblage of men exhibiting, as the *Utica Herald* remarks, in its appearance and evincing in its action, more intelligence and practical wisdom, greater frankness and honesty of purpose, than is often gathered together. Among the gentlemen present were Mr. Edwin Hammond, the famous Vermont sheep breeder, Mr. Sanford, of the same State, Mr. King, of Dutchess county, the breeder of Cotswolds, Mr. Holmes, of Washington, Hon. Mr. Pottle, of Ontario, Judge Ketchum, of Wayne, and others, representing about every section of the State of New York.

Our own recollection of the coldness of the mountain streams in which we washed sheep in our younger days, and of the colds, rheumatism and fevers which were clearly traceable to such exposure, often incurred when in a profuse perspiration from the chasing necessary to drive the sheep from the pasture to the brook, leads us to wonder that in discussions of the expediency of washing, so little is said of the injurious effect of this practice on the health and life of the men who perform the operation.

Resolved, That sheep should be guarded as far as practicable from an admixture of hay, straw, thistles, burs, or other like extraneous substances, with their wool.

Resolved, That washing sheep in running streams, in season to shear them at the proper time in the spring, is often dangerous by reason of the coldness of the water, especially in regions where the streams descend from mountains or highlands; that it is not conveniently practicable in other regions, on account of the remoteness of running streams; that in many localities the prevalence of contageous diseases, like scab and hoof rot, render it unsafe to take a sound sheep to any of the convenient washing places; that the natural yolk or "grease" if left in the sheared wool does not injure it in any respect for keeping or manufacturing; that the greatest portion of the wool grown in the world is and always has been shorn and sold unwashed, without objection from any quarter; that we possess certain information that many of the largest wool manufacturers in the United States are willing, and a large number of them prefer, to have American wool brought to market unwashed; and that accordingly we recommend the wool growers of the country to consult their own convenience and inclinations in this matter.

Resolved, That the length of time which should elapse between washing and shearing cannot be determined properly by the number of days, but it should also be regulated by the state of the weather; that wool should not be shorn after washing until it has acquired its characteristic glossy look and soft feeling.

Resolved, That wool is not injured in the least degree for *manufacturing* by being done up as tightly as practicable; that, however, when done up extremely tight and then pressed together by its own weight in large masses, the difficulty of separating it by the sorter is increased; that there is no danger of producing this effect by any ordinary application of strength, when the fleece is folded and tied by hand, but that it may be produced, especially in the case of greasy wools, in wool presses; that the twine used for tying should not be unnecessarily large, or used in unnecessary quantities, and should be of such texture that particles of it will not become incorporated with the wool.

Resolved, That dead wool, or any other wool of inferior quality or condition, should not be put within fleeces; but that such being the prevailing and well understood custom in this State, it is proper, in the absence of any contrary understanding, to put the tags of every fleece within it, if in equal condition.

Resolved, That any uniform and arbitrary rate of deduction on unwashed fleeces operates unequally and unjustly on growers, because some breeds and varieties of sheep have far more yolk or "grease" in their wool than others, because the proportion of yolk or "grease" which is retained in the unwashed fleeces of even the same sheep, depends in a great degree upon the care with which they are housed from rain and snow, because some flocks are kept where their wool becomes mixed with dirt and other heavy substances, while others are not; that such arbitrary rate of deduction for impurities is not tolerated in the sale of other farm products; that no excuse can be set up for it in the case of wool, but the inability of the buyer to determine the relative amounts of the impurity—in other words, his ignorance of his business; that wool growers are not required to submit to loss and injustice to enable wool dealers or wool manufacturers to employ cheap and unqualified agents.

Resolved, That the practice which has obtained among buyers of establishing a maximum price to offer for the best wools of a neighborhood, which is sufficiently low to enable them to offer nearly the same price for all the wools of that neighborhood, thus, in effect, sacrificing the interests of the grower who aims at high quality and condition, for the benefit of the grower of inferior and dirty wools; directly encourages the production of the latter, and offers a premium on those bad modes of preparing wools for market, of which the buyer so loudly complains; that it has tended, more than all other causes put together, to the debasement of American wools; that when the buyer will make a just discrimination in favor of superior quality and condition, he will have no difficulty in securing them.

Resolved, That we favor no proscriptive combinations, and that we utter no menaces to those of our number who do not carry out our recommendations; nor do we propose to be in the least degree influenced by such action on the part of others towards the persons who buy of us.

WOOL SAMPLES APPROVED.

We learn by the *Boston Cultivator* that the committees appointed by the National Wool Growers' Association and the National Association of Wool Manufacturers, for the purpose of examining the Samples of Wool prepared by Geo. W. Bond, in compliance with a provision in the late tariff law, met at the office of Mr. Bond, in Congress street, Boston, May 23.

These committees consisted of the following gentlemen: *from the Wool Growers' Association*, Henry S. Randall of N. Y., Chairman, with N. S. Townshend of Ohio, Ed. Hammond of Vt., A. M. Garland of Ill., and Burdett Loomis of Ct.; *from the Wool Manufacturers' Asssociation*, J. Wiley Edmunds of Mass., Nelson Kingsbury of Ct., and John L. Hayes, of Boston, Secretary.

Each of the eighty-four samples were thoroughly and critically examined. The *Cultivator* understands that but one of the samples was changed, and one omitted, subject to the decision of the Secretary of the Treasury.

Having completed their examination, the following resolution was unanimously adopted and signed by the committee and transmitted to the Secretary of the Treasury:—

Resolved, By the Committee of the "National Wool Growers' Association," and the "National Association of Wool Manufacturers," convened in Boston, May 22d, 1867, under the authority of the Hon. Secretary of the Treasury, to examine the samples of wool, hair, &c., collected and prepared by Mr. George Wm. Bond, to be used as a standard of comparison in the Custom Houses of the United States, under the provisions of the Act of March 2d, 1867, that they have carefully examined and compared all the said samples now prepared, and that, as finally agreed on, they are suitable for the objects for which they are intended.

For the New England Farmer.

NOXIOUS ANIMALS, INCLUDING INSECTS.---NO. VI.

Plant Lice.

The insects which we have had under consideration in previous numbers are the *Agrotidians*, cut worms, of the order *Lepidoptera*—the perfected insects of which are moths or millers, having four wings covered with branny scales. Our present examples—the *Aphides*, plant lice, belong to the order *Hemiptera* and sub order *Homoptera*.

Although the different orders of insects have, very properly, received their names from some peculiarity of their wings in the adult state, as sheath wings, scaly wings, half wings, net wings, &c., yet they have other distinguishing characteristics; and the order in which is found the plant louse, unlike the insects with jaws, take their nourishment by suction, through a horny beak provided for that purpose. Their transformations, also, are only partial, the *larva* and *pupa*, though wingless, resembling the adult. To this order belong various bugs, as the squash bug, the yellow stripped bug, the chinch bug of the West, the bed bug, &c. A perfect plant louse has four wings, perfect and similar, as the term *Homoptera* implies, although the posterior pair is smaller.

We have now a genus of very small animals under consideration,—some of the *Aphidians* being so minute as to escape common observation; yet their injuries are far from insignificant. Indeed, the difficulty of repelling the attacks of noxious animals is nearly in an inverse ratio to their size; for what they lack in magnitude is more than made up in number, while their minuteness shields them from our ordinary means of destruction.

The genus *Aphis* embraces a vast number of species of various sizes and colors; and there is scarcely a plant that grows, that on

its roots, stem, or leaves, is not occasionally infested by some one of these species. The most common color is a light green, nearly correspsnding with the color of the plant on which they are found; though the *Aphis Cerasi* —cherry louse—is nearly black, and the *Aphis Avenæ*—oat louse—is of a reddish brown color.

The most careless observer of apple trees must have frequently noticed the *Aphides Mali* —apple tree lice—and their effects, the curled leaves, on the previously rapidly growing twigs. He must have noticed, also, that such twigs are frequented by a host of busy ants, passing up and down the tree. The almost invariable association of these two very different insects on the apple tree, has furnished proof positive to some, that the lice, so called, were the offspring of the ants; but a closer examination of the louse, especially with a magnifier, will disclose two processes projecting obliquely upward, one from each side of the upper half of the abdomen. These projections are called honey tubes, because from them the little animal at short intervals excretes a sugary fluid, in taste and consistence not unlike honey. We suppose that this excretion is not true fecal matter; for the like appendages on the grain louse, according to Dr. Fitch, excrete no honey, and as we infer, nothing else. Again, these abdominal appendages are said by entomologists to *secrete* the sugary fluid; and this would be an improper expression if these tubes were mere outlets of ordure; and it would also be strange indeed, to find in any animal, two or three such outlets. We are told that *Aphides* sometimes colonize on the leaves of high trees, or in other situations, undiscovered by ants, where the accumulation of their saccharine excretions takes the name of honey-dew; but this should not be confounded with another honey-dew which was such a mystery to the ancients, but is now believed to be an extravasation of sap, condensed by the air and heat of summer.

But to return to the apple tree lice. The organism for secreting this sugary fluid is probably in the honey tube itself or near its base. The common small black ants of the fields, which have a large sugar-tooth development, are careful that none of that insect honey dew shall be left on the apple trees to puzzle modern observers.

We are not surprised at the remark of Reaumur that, "It appears that nature rears *Aphides* on plants for the purpose of feeding other insects, which without them, would perish with hunger," for this in accordance with an obvious law of nature; nor are we surprised that an animal should have an organism for secreting from the fluids of its own body nourishment for its young, for such an organism pertains to all the mammalia; but that an animal should have an organism for no other assignable use but that of secreting nourishment for other animals, is most strange and anomalous.

Other anomalies pertaining to this insect will be noticed in our next number.

I. B. Hartwell.

Wilkinsonville, Mass., 1867.

For the New England Farmer.

THE SALT HAY CROP OF ESSEX CO.

Essex county, Mass., in the vicinity of the ocean, is somewhat noted for the crop of salt hay which it produces naturally and without cultivation. It is an interesting subject of inquiry whether this spontaneous production is, in reality, a source of much profit and wealth to the county.

All other kinds of grasses, except fresh meadow, or what is called swale, require some outlay and labor in their cultivation; and unless something is continually added to the land as well as taken away, it will eventually run out and hardly pay for the labor of getting the the crop. But the salt marsh needs no manuring or working. The deposits from the salt water by the tides being sufficient to enrich it, and keep it in the same condition from year to year. Indeed, it seems to be incapable of improvement to any great extent. All that has ever been done to improve its condition, that I know of, being to dig ditches about one foot wide, and two or three feet deep, to take off the water quicker, both salt and fresh. This is a great improvement on such marshes as are intersected by creeks, and where the hay is removed by boats. It takes off the water from low places and "salt-ponds," where it would otherwise remain all the time during a course of high tides. It also prevents the formation in low places of a sort of crust, something like hard leather, which, when dry, completely kills out the grass. On shore marsh it has been doubted by some whether ditching, on the whole, was productive of any good results. Although it increases the crop frequently twofold, it causes the marsh to produce another kind of grass which is lighter, less salt, and inferior in value to what it bears naturally. It is said further, that while it increases the quantity for a few years, it does not hold out, but grows less again.

The towns of Essex, Ipswich, Rowley, Newburyport, Gloucester and Lynn, are the most distinguished localities for this kind of land; but the inhabitants of all the adjoining towns, to the distance of twelve or fifteen miles, own perhaps nearly one-half of the land, and make a business of getting the hay annually. The harvest commences about the middle or last of July; and holds out till the frosts render the hay worthless. As the land will not admit of ordinary carting, various ways are practiced to get the hay ashore from the marsh. On shore-marsh, where the distance is not great, it is generally carried off on hay poles. Where the distance is greater, it is carted off by horses, furnished with a peculiar kind of broad shoes made for the purpose, on racks with wide-

rimmed wheels. This mode injures the land considerably, making the track where it is carried off nearly unproductive. Large quantities are annually stacked on the marsh on stakes driven into the ground, and projecting high enough to keep the hay out of the way of ordinary tides, to be removed in the winter by teams when the creeks are frozen over. But probably more is removed by boats than in any other way. This is done both when the hay is in a dry and green state. On the theory that the salter the hay the better it is, many think that the quality of the fodder is better when it can be cured on the marsh, rather than be moved and dried on the upland. This is the opinion of the writer, but there is much difference in the minds of farmers about this; and still more in their practice, as most are obliged to consult their necessities and convenience, as the business must be attended to frequently on such a day, and at such hours, or run the risk of losing the labor and the hay.

The salt hay harvest, under any circumstances, but especially for those living at a distance, is very hard and laborious. As stated above, on account of the weather and tides, and the distance, it is always necessary to attend to the work in good earnest when we get there. Drones and lazy persons, though they may be endured at home, cannot be tolerated at all here. Even those of delicate constitutions, or slightly indisposed, however good their intentions, are generally advised to stay at home. Employers and laborers, too, in this work must not be over nice as regards refined and literary associates in labor; nor too exact as to set hours of work. The advocates of the eight hour system will, I think, find it very difficult to make a rule that will work well in the salt hay harvest. Twelve, fifteen, and even eighteen hours, owing to high winds, tides and disappointments, are sometimes necessary to accomplish the day's work, and attain the object contemplated in the morning; and this, when it cannot be helped, ought to be submitted to by laborers without complaining. But the exposure, hard work, and long days necessary in this employment, are partly balanced by the excitement, hilarity and good living which very often go with it; so that laborers, as a general thing, of robust health are not averse to engaging in it. The business is regarded as healthy for most people.

Thirty years ago salt hay was worth from eight to twelve dollars per ton in the market, and the price of labor was $1 to $1.25 per day. At present it is worth from $20 to $25 per ton, and the price of labor is $2 or $2.50 per day, and board.

Marsh land, for the purposes of taxation, is valued by the assessors at about thirty dollars per acre. When sold at auction or private sale, the price varies according to quality and location; but the above may be considered a fair average price. We think one ton to an acre may be considered an average crop. Some acres will produce two tons.

When the hay has to be freighted an ordinary distance, one man is reckoned to perform the labor of getting one-half acre, or about twelve cwt. of hay, in a day. The hay is then landed and spread on the upland, or loaded on wagons to be carted to the owner, in a green state; making the expense of getting it in this way, including wharfage and boat and other incidental items, in round numbers, about seven dollars per ton. It then has to be cured; the only labor required in good weather being to turn it once, and rake it up. The expense of carting it five miles is about $2.50 per ton. Thus making the whole cost of getting and hauling five miles, about $12 per ton.

Of course these statistics will be varied very much by the weather, tides, &c.; but under ordinary circumstances, I think it will be seen that a fair profit is left for the owner. Those who live in the immediate vicinity of the marsh can doubtless secure the crop some cheaper and easier than those who live more remote. And the shore marsh yields less burden, but of a better quality than the broad marsh; and the expense of getting it is less. The hay that is freighted varies much in quality; some kinds of coarse thatch being worth but little except for manure. It is excellent for that, and is largely used by some farmers for litter, &c., after being picked over by the cattle.

This kind of fodder appears to be growing in favor with the community. It is more extensively teamed to Boston and other places remote from its locality, than formerly, and finds a ready market. In the immediate vicinity where it grows, it is fed out to all kinds of stock. It was formerly thought not to be good for horses; but the writer has been informed that some horses have been wintered entirely on the coarser kinds, with the addition of some meal daily, and were very strong and in good condition all the time. It is frequently mixed with swale hay, and fed out to oxen and cows, which will thus consume both kinds, when the meadow hay would not be eaten at all alone.

Its nature is to impart flesh and strength to animals rather than fat. Working oxen kept chiefly on the better kinds have been noted for their sleek appearance, and their strength and ability to labor; but it is never used for the purpose of fattening. It should not be fed out extensively to cows giving milk. They will eat it with great avidity after being confined to fresh fodder; and a small quantity is beneficial and even necessary for them. But the milk from cows kept principally on salt hay, though of the better kinds, is apt to be blue and thin, and of a disagreeable taste.

I think the facts fairly warrant me in saying that a certain amount of this kind of fodder, though it may not be absolutely necessary for stock, is very beneficial, and that the statistics show that farmers get ordinarily a fair compensation for their labor and capital invested.

Like almost everything else, the business may be carried to excess and overdone. I incline to the opinion that the *salt hay crop* is a benefitto the farmers of Essex county; and I submit that all farmers who do not have to go more than seven or eight miles are better off for having a share in it. N. B. BUTLER.

Hamilton, Mass., March 28, 1867.

REMARKS.—We have sometimes doubted whether the salt hay crop of Essex county, has been profitable to the farmers who harvest it; but the facts so clearly and minutely stated in the above well drawn article, make us agree with the writer in the result to which he has arrived, viz:—that farmers who do not have to go more than seven or eight miles for it *may* be better off for having a share in it.

FEEDING EARLY CUT GRASS.

In some notes on the farm of Hon. Harris Lewis of Frankfort, N. Y., President of the Little Falls Farmers' Club, by Mr. X. A. Willard, in the *Country Gentleman*, we find the following remarks on his use of early cut hay:—

Mr. Lewis holds that grass, all things considered, is the best food for milch cows; and that *dried grass* is cheaper and better for cows in the spring, than hay and grain. He usually commences cutting his grass in June—cures it, if possible, without rain, and so that it will come out of the mow with a bright green color, and with the fragrance of newly mown hay. This he uses for cows giving milk in spring, before turning out to pasture.

He used to feed his cows in spring with grains, ship-stuffs, &c.—often what would be called "high feeding"—but found it to result in various troubles and serious losses; garget attacked the udder, ill-health prevailed in various ways, and his cows gave out sooner than they ought. He then changed to his present system of feeding, and with the most happy results. His cows are healthy, they keep in flesh, they yield a good supply of milk, and it is all done with much less expense than the grain feeding. His cows to-day (May 13th,) are in good flesh, thrifty, healthy and strong, and yet they have not had a mouthful of grain or any other feed than "*dried grass.*"

We have given the facts, and they may perhaps be suggestive to those who have been paying out large sums for grain to feed, and who perhaps have troubles in their herds for which they are unable to account. If the system adopted by Mr. Lewis is the true one, (and he contends that it is,) then it should be generally introduced. To say the least, it is worth the testing, and our stockmen and dairymen will do well to make some provision the coming season for harvesting acrop of "*dried grass.*"

UP IN THE BARN.

BY THOMAS LACKLAND.

Old Farmer Joe steps through the doors
As wide to him as gates of Thebes;
And thoughtful walks about the floors
Whereon are piled his winter stores,
And counts the profits of his glebes.

Ten tons of timothy up there,
And four of clover in the bay;
Red-top that's cut, well, middlin' fair,
And bins of roots, oblong and square,
To help eke out the crops of hay.

A dozen head of cattle stand
Reflective in the leaf-strewn yard;
And stalks are stacked on every hand,
The latest offering of the land
To labor long maintained and hard.

Cart-loads of pumpkins yonder lie—
The horse is feeding in his stall,
The oats are bundled scaffold high,
And peas and beans are heaped hard by,
As if there were some festival.

At length Old Farmer Joe sits down—
A patch across each of his knees;
He crowds his hat back on his crown,
Then clasps his hands—so hard and brown—
And, like a farmer, takes his ease.

"How fast the years do go!"
"It seems, in fact, but yesterday,
That in this very barn, we three—
David, Ezekiel and me—
Pitched in the summer loads of hay!

David—he sails his clipper now;
And 'Zekiel died in Mexico—
Some one must stay and ride to plow,
Get up the horse and milk the cow—
And who, of course, but little Joe.

I *might* have been—I can't tell what!
Who knows about it till he tries?
I *might* have settled in some spot,
Where money is more easy got;
Perhaps beneath Pacific's skies.

I *might* have preached, like Parson Jones;
Or got a living at the law;
I might have gone to Congress, *sure;*
I might have kept a Water Cure;
I *might* have gone and been—oh, pshaw!

Far better is it as it is;
What future waits him, no man knows:
What he has *got*, that *sure*, is his;
It makes no odds if stocks *have riz*,
Or politicians come to blows!

Content is rich and somethin' more—
I think I've heard somebody say;
If it rains, it's apt to pour;
And I am rich on the barn floor,
Where all is mine that I can raise.

I've plowed and mowed this dear old farm,
Till not a rod but what I know;
I've kept the old folks snug and warm—
And lived without a twinge of harm—
I don't care how the storm might blow.

And on this same old farm I'll stay,
And raise my cattle and my corn;
Here shall these hairs turn wholly gray;
These feet shall never learn to stray;
But I will die where I was born."

And Farmer Joe pulled down his hat,
And stood upon his feet once more;
He would not argue, after that,
But, like a born aristocrat,
Kept on his walk about the floor.

CIRSIUM (CARDUUS) ARVENSE.

"*Vitium agrorum apud nos primarium est.*" This will be readily translated by many a farmer's boy who never studied Latin at all. Just look at the picture!—"Canada Thistle—it is the greatest pest of our fields." Right, first time.

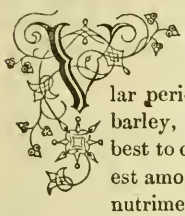
But why call it Canada Thistle? If you look in Webster's large Dictionary, you will see what it is called in some half a dozen European languages, where it is execrated as heartily by barefooted children, and barehanded boys and men—by the Latins, the French, Germans, English, &c.,—as it is by us here in America. It is supposed that it emigrated to this continent with the Canadian French, who came from Normandy, where it was known to abound. From Canada it might have been smuggled into the States, or possibly it crossed the Line under some "reciprocity treaty" of old. At any rate, it is here, to our sorrow, and the question now is what shall we do with it? Is it to go wherever we go, budding and blossoming on every acre we cultivate, and extending the germs of its pernicious existence on the wings of the wind, over the broad prairies and fertile valleys of the West, as it has over so large a portion of our New England farms?

Soiling and Wheat in Massachusetts.—Mr. Jas. L. Humphrey of New Bedford informs the New York Farmers' Club that he tried spring vetches for soiling last summer, and likes them much. He sowed them on ground which was prepared for barley, and obtained a large crop, which his cows relished highly. He fed it alternately with sweet corn. He had always found one difficulty in feeding largely on sweet corn,—it has a tendency to induce garget; but as he fed it last year, there was no trouble in that direction. After clearing the ground from the vetches, which it left very mellow, plowed and sowed to white winter wheat and grass seed, giving an application of ashes at the last harrowing, and now the wheat looks finely. He has never had trouble in raising good wheat on rich ground, early sown and fed off once during the fall; having once raised 32 bushels Southern white wheat to the acre.

Caterpillars.—Thanks, that we have a partial deliverance from the pest. We have visited some hundreds of trees, and among them all have not yet found half so many caterpillars as we found last year on two dozen trees. Who can tell us what has arrested them so suddenly? We have been told, June 2, that the *canker worm* has not made his appearance in any large numbers. How utterly beyond the power of man the progress of these minute creatures has been, and yet how silently and effectually their march has been stayed by Him who ruleth all things. "Thus far shalt thou go," is the fiat which they must obey, as well as the proud waves of the sea. How well it becomes us to be humble, trusting and hopeful, in a position where we know so little of the operation of natural laws about us.

Heavy Fleece.—We are informed by a correspondent that O. C. Burton, of Windham, Vt., sheared a fleece of thirteen months' growth, that weighed 25 lbs. 2 oz., from a ram four years old in June, that weighed 133 lbs. after being shorn. He was sired by the famous Hotchkiss buck, Hampton, N. Y., and was bought by Eli Ray, of East Poultney, Vt.

HARVESTING THE SMALL GRAINS.



ERY little critical observation has been given by our people as to the particular period in the growth of wheat, barley, rye, and oats, when it is best to cut them, to secure the largest amount and best quality of the nutriment which they severally contain. A few careful experiments have been made by American farmers, and many in England and other European countries. Wherever they have occurred, the testimony is uniform that in, order to secure the best results, grain should be cut *some days before it is fully ripe.*

In the harvest which will soon take place, there will be opportunity for every farmer to test the question for himself, by cutting a portion of his grain at that moment when the kernel or berry is fully formed, but so soft that when he squeezes it between his thumb nails he can reduce it to a pulp, and notice a slightly milky juice in the mashed mass. Then leave a portion of the grain standing ten or twelve days later, and upon threshing, cleaning up, grinding and using, carefully compare the results.

If this course were adopted by three or four intelligent farmers in every neighborhood, and reported to the agricultural papers, it would do much to settle the question and introduce a practice which, in the aggregate, would save many thousands of dollars to the farmers of New England. In the West it might be millions.

According to an experiment by Mr. John Hannam, of North Deighton, England, it was evident that the wheat reaped a *fortnight* before it was ripe, had the advantage of the ripe in every point.

1. In weight of gross produce, 13 1-5 per cent.

2. In weight of equal measures, nearly 1-2 per cent.

3. In weight of equal number of grains, nearly 2 1-5 per cent.

4. In quality and value, 3 1-4 per cent.

5. In weight of straw, more than 5 per cent.

Some of the advantages, then, in cutting grain before it is fully ripe, besides the better quality and the intrinsic value of more than *three and one-fourth* per cent. are:

1. That the straw is of a better quality, which is an item of importance, now that all kinds of fodder for horses and cattle are selling at prices entirely unprecedented, we believe, in this or any other country. Sir H. Davy says that in the sap of wheat, the straw, and in all succulent plants, there is *naturally* a great proportion of *mucilaginous and saccharine matter*, and the greatest proportion of this is present before the flower is dead ripe. So in wheat, when we allow the straw to remain till thoroughly ripe, a portion of the sugar is converted, by the action of light, heat, &c., into mucilage, and a great proportion of the nutritive powers are absorbed by the atmosphere, or lost in some manner; for, as Mr. Sinclair observes, there is a great difference between straws or leaves that have been dried after they were cut in a succulent state, and those which are dried by nature while growing. The former *retain* all their nutritive powers, but the latter if *completely dry, very little, if any.*

2. We have a better chance of securing the crop. All grasses and grains are more readily and cheaply harvested in July than in August. The days are long, the sun hot, the atmosphere more clear and with more air than later in the season. So that, if we cut grain ten days or a fortnight before it thoroughly ripens, we shall be quite likely to have secured the whole harvest at about the time when we have heretofore just commenced it.

THE CURCULIO.

The *Prairie Farmer* of June 1 closes some remarks upon the ravages of this insect on the peach crop in Southern Illinois, and of the means adopted for its destruction, with the following paragraph:

> The Editor of the NEW ENGLAND FARMER asserts in his last issue that, in spite of this insect's numbers and depredations, entomologists are ignorant of its manner of passing the winter, or what becomes of it at that time. This is a mistake. Entomologists know, and most fruit men know, said editor to the contrary notwithstanding, that the curculio hibernates in the perfect or beetle state, and its natural history is as well known as that of the cow.

This we regard as a rather strong representation of our language, and as a pretty strong statement of the knowledge claimed by entomologists of the history of the curculio from the time it assumes the perfect state in July or August, to its appearance on the young fruit the succeeding spring.

In another column of the same paper, the following commendatory sentence is quoted in an editorial notice of Dr. Warder's new work on the apple: "To say that we are pleased with this book is but a tame expression; we are delighted, for it gives us new facts—it places Western pomology on a firm basis."

Now, does Dr. Warder claim to be as familiar with the natural history of the curculio, as with that of the cow? On the contrary, he speaks of it as "the noted and notorious, and yet *little known*, Plum Weevil." This, surely, is a rather "tame" confession for the author of a practical book on pomology, intended, specially with all its "new facts," for a section in which the ravages of this insect are as serious as they appear to be, from the statements of some of the most careful observers in the "favored northwest." Dr. Walsh, of Rock Island, Illinois, says: "Out of the choicest apples selected for exhibition at our State Fairs, a large proportion will be found, on close inspection, to be more or less blemished from this cause." Dr. Hall, of Alton, Ill., "does not recollect to have seen a single apple the past season, grown at that point, that did not contain from one to twenty or more punctures made by this insect." If these are facts, is Western pomology placed on a firm basis by a work which devotes less than a page to this "noted and notorious, and yet little known" pest?

The most complete history of the curculio that we have ever seen, is that by Dr. Walsh, occupying thirteen columns in the April number of the *Practical Entomologist*. He describes, particularly, three distinct snout-beetles of the curculio family—the "True Curculio;" the "Plum Gouger," and the "Four-humped Curculio."

THE TRUE CURCULIO, (*Conotrachelus Nenuphar*, Herbst,) he says may be distinguished from all other North American snout-beetles, by having on the middle of each of his wings an elongate, knife-edged hump, which is black and shining, so as to resemble a piece of black sealing wax. Behind these two humps there is usually placed a broad clay-yellow band, marked in the middle with white; but sometimes this entire band is white.

THE PLUM GOUGER, (*Anthonomus prunicida*, Walsh,) though often confounded with the curculio, and sometimes supposed to be the male of that insect, bores a round hole like the puncture of a pin, wherein to deposit its egg, instead of the crescent of the curculio, making five or six such holes in the plum, from which the gum exudes. The larvæ bore directly into the kernel, on which they exclusively feed.

THE FOUR-HUMPED CURCULIO, (*Anthonomus 4-gibbus*, Say,) is of a dull brown color, shading into red-rust behind, with four projecting humps on its wing-cases, none of which are shinging black, as in the case of the common "curculio."

Dr. Walsh gives the following characteristics of these three curculios, by which one may be distinguished from the other.

> The common "Curculio" has a snout which hangs down like the trunk of an elephant, and which he can, whenever he chooses, fold backwards between his legs, although he has no power to project it straight forwards. On the other hand, the Plum-gonger and the Four-humped Curculio usually carry their snouts projected horizontally or nearly so, in front of them; but upon occasion can depress them vertically, although they have no power to fold them backwards between their legs. Of these two, thus agreeing as to the structure of their snouts, the Plum-gouger is at once distinguishable by having a smooth back, without any humps on it, whereas the Four-humped Curculio, as its name indicates, has two very conspicuous humps on each of his wing cases. As regards their habits, the common Curculio infests stone fruit more especially, but not unfrequently has been known to attack pip-fruit; while, so far as is at present known, the Plum-gonger is exclusively confined to stone fruit, and the Four-humped Curculio to pip-fruit.

We are tempted to extend these extracts, but must confine ourselves to what the writer says of the history of the curculio after reaching its perfect state—of how and where, in fact, it passes some ten months in each year, and what it does for a living from July to May.

In relation to the true curculio, Mr. Walsh says:

> Some of these perfect beetles come out as early as the middle of July—some in August—some as late as the latter end of September. Hence, as it seemed incredible that a beetle coming out in July should live all through the winter, and until the next season's crop of plums were set, and as no one had as yet ascertained that any "Curculio" hybernated in the beetle state, Dr. Fitch, and, in the earlier edition of his work, Dr. Harris, have suggested the hypothesis that the species is double-brooded; the second brood being supposed from the analogy of a very distinct snout-beetle which attacks the plum in Europe (*Rhynchites cupreus*,) to lay its eggs in the twigs of the infested trees, the larvæ proceeding from which eggs pass the winter in the twig, and afterwards produce the beetles that sting the fruit in the following summer. (*N. Y. Rep.* II § 52, and *Inj. Ins.* edit. 1841, p. 68.) But, in the first place, there is no proof of any such fact; and, in the second place, I have already shown that Dr. Trimble actually found specimens of the "Curculio" hybernating under the shingles of a roof, in the chinks of stone walls,

and under the bark of an apple tree; (*Fruit Insects*, p. 99;) and since then I have been informed by Mr. Rathvon, that he has himself found specimens hybernating under the bark of the cherry and the wild cherry in the months of March and November. Dr. Harris has also recorded the fact, that he has "found these beetles as early as the 30th of March," (*Inj. Ins.* p. 75,) apparently in the latitude of Massachusetts—a fact which is quite irreconcilable with the hypothesis of their having come out from the pupa state at so early a date in so cold a climate, and evidently implies that they must have passed the winter in the perfect state, and been tempted, as often happens in such cases, by some peculiarly fine and warm day, to come forth temporarily from their winter quarters into the open air. The truth of the matter is, that most authors have been disposed to underrate the duration of insect life during the perfect or winged state, putting the average period at a few days or weeks, when perhaps a few months would be nearer the mark. *There is little doubt* now, in my mind, that the "Curculios" bred from the fruit of one year are the same individuals that puncture the fruit of the following year."

Of the Plum-gouger he says:

Occasionally, at all events, and *probably* as a general rule, the larva of this snout-beetle, instead of going underground to transform into the pupa state, as that of the common "Curculio" almost always does, transforms inside the stone of the fruit which it inhabits, the perfect beetle emerging as usual, through a round hole which the larva had previously cut for that express purpose.

His knowledge, or rather his want of knowledge, of the history of the Four-humped Curculio, is stated with that frankness and modesty which ever characterize the truly scientific investigator:

I have never traced this insect through its transformations, and do not know how long the larva remains in the infested fruit—whether it retires underground to transform or transforms within the apple—or whether the perfect beetle makes its appearance the same season or in the following spring. Neither do I know whether apples containing these larvæ fall prematurely from the tree. Mr. Cutter observes, that he found it impossible to jar these snout-beetles off the tree on to the sheets. I have always myself succeeded in dislodging any number of them from crab and thorn trees, by beating the boughs into an inverted umbrella. But no doubt, as it belongs to the same genus, and has the same structural peculiarities as the Plum-gouger, it will require equally severe jarring to bring it to the ground. Whether it can be effectually counterworked in any other manner, can only be told after we become more fully acquainted with its habits.

He then adds:

There are several other snout-beetles which infest fruit trees, either cultivated or wild; but their history and habits yet remain to be fully investigated, and I hope to be able to devote some considerable attention to this subject during the coming season.

We cannot close this article without remarking that this one paper on the curculio is richly worth the price of a year's subscription to the *Practical Entomologist*, published at Philadelphia, at 50c per year, nor without expressing the hope that the natural history of this insect will soon be, if it is not now, "as well known as that of the cow."

Although some four columns of this article are devoted to a consideration of the means of destroying the curculio, we find nothing new in the suggestions of Dr. Walsh. Gathering up and destroying the fruit by children or pigs; jarring the insects upon sheets; and dusting the tree thoroughly with air-slaked lime, are the only remedies which are not pronounced "moonshine." He does, however, recommend an improved sheet apparatus, consisting of a light frame, on a wheel, or a sort of extended wheel barrow, of some 11 feet wide by 13 long, covered with cloth, with an opening to admit the trunk of the tree to near the centre of the platform, where a suitable bunter is placed, by which the tree is jarred. As the insects fall they roll into depressed places in the sheet, and from thence into pockets or sacks, from which they may be taken and destroyed.

HIS COWS ALWAYS DO WELL.

In a letter to the New York Farmers' Club, Mr. J. L. Humphrey of New Bedford, gives the following account of the management by which his cows are exempt from caked bag, and other diseases which afflict many dairies:—

I never have any trouble in that direction, no matter how fat the cow may be at the time of calving. I keep the best cows that I can get, and find it the most profitable for my purpose to have them calve only once in eighteen months. I feed moderately on grain—generally oats and corn mixed, with the addition of roots during the winter—so that my cows, though they may milk down thin during the first six or eight months, will always come up again in flesh before I dry them off. I never let them go dry less than *two months*; three is better if it occurs in summer, and I always take away the grain as soon as they are dry, and sometimes before, if too much inclined to milk. For two or three weeks before calving I keep them on a spare but laxative diet—if in winter early cut hay or corn fodder and hay with a few roots but *no straw*. After calving give one pound of Epsom salts, and a few hours after a warm *bran mash*—scalding the bran with boiling water—commencing to feed a little hay in twelve hours from calving, and gradually increasing to full feed after two or three days. Since I have adopted this course I have had no trouble with the bag but what would readily yield to a few applications of hot water *followed by dry rubbing*.

PRINCIPLES INVOLVED IN HOEING CORN.

THE popular opinion is, that hoeing is done *merely* to *kill weeds*. It will not be difficult to show that faithful hoeing does much more than this, even to *warming*, *moistening*, and *manuring* the soil while hoeing up the weeds.

The air about us is always moist. The hotter the day the more moist it is. It has been ascertained that in a hot day in July, more than thirteen hundred gallons of water have been found to evaporate from a single acre of land. The soil has a strong attraction for water, and it is a part of the duty of the atmosphere to penetrate the soil, and moisten it, as well as to give us the breath of life. But the soil, on its part, must be in a suitable condition to receive it. If the surface is compact the air cannot readily enter it. When the weeds are destroyed by the hoe, the surface is made loose, the air penetrates it freely, and carries along the moisture it contains, and *thus waters the field*.

It follows, then, that a field often hoed, whether there are weeds or not, will withstand a drought better than one that is not hoed.

The soil is as active as the air, for the moment the air enters, the soil robs it of its moisture and passes it along to the roots of the plants. Thus a carefully cultivated field may be covered with luxuriant crops during a drought, while those on the hard surface of another may be perishing for want of moisture.

The air also contains other elements besides moisture. One of them is *ammonia*, which is exceedingly valuable to crops, and it is sifted from the atmosphere by the falling rain. When the surface of the field is fine, showers readily penetrate it, carry the ammonia down into the soil, and thus manure it by every rain that falls. The water passes along,—the ammonia it contains touches minerals that are in the soil, and dissolving portions of them, supplies the roots of plants with the food they need.

Were it not for the agency of ammonia, soils might abound in valuable minerals which would remain inactive, and crops upon them would fail to come to perfection. Thus, it seems clear, that keeping soils in a porous condition, results in an actual *manuring* of them.

Water thus admitted to the soil contains a sensible amount of *heat*, which is arrested by it, and kept there to warm and stimulate the roots of plants.

Is it not clear, then, attentive reader, that frequently stirring the soil does actually *destroy* weeds, *moisten* the soil, *warm* the soil and *manure* it? The theory is rational and sustained by often-repeated experiments. Every farmer may satisfy himself by a little care and considerable observation, that the operation of hoeing has an efficacy entirely beyond that of merely destroying the weeds.

We are not yet sufficiently systematic and pains-taking in our farm work. We do not generally realize the fact, that thorough tillage is almost as good for the crop as a light application of manure to lands cultivated in a slovenly manner.

We must feel assured of the fact that *tillage has the same effect as manure;* that the literal meaning of the word *manure* is *hand labor*, as well as of a dressing. To manure the land is to hoe, to stir the soil, to expose it to the atmosphere, to plow, to harrow, to cultivate, in addition to all we can get from the stalls, or in any other way, as manure.

The ancient Romans made Sterculius a god because he discovered that the droppings of animals had the same effect upon the soil as to hoe it!

Keep these facts in mind, and hoe, *hoe*, HOE, until harvests are ready to be gathered if a weed is to be found among them.

GROWTH OF INDIAN CORN.

There are various opinions among farmers, as to the best time for planting Indian corn. Some contend that the seed must be put in the 10th of May, others prefer the 20th, while a third class are governed more by the season and the condition of the soil, than by any dates.

We have before us an old "table of the growth of Indian corn, showing the number of days from planting, for each period of growth." From this it appears that the principal circumstance which caused any difference of growth was in the time of planting. What was planted about the beginning of May, appears to have required from eighty-six to eighty-nine days to be fit for eating. What was planted earlier took a longer time to come forward and did not ripen at so early a date as that at the beginning of May. That planted in July lost in the fall the time it gained in summer,

and furnished green corn for the beginning of October. That planted about the middle of June, kept its growth the whole summer, and became fit for eating in seventy-two days.

In our own practice, we have found corn that was planted during the first five days in June, to do just as well as that planted on the the 20th May. If planted early it has the recommendation of being done and out of the way. Corn that is planted too early, however, comes up in a sickly condition, and has a feeble habit which it takes a long time to recover from.

For the New England Farmer.

VARIOUS MATTERS.

Mr. Editor:—What has become of the caterpillars this year? In our neighborhood we have not a tenth part of the usual "crop." They hatched well, about the 23d of April, then came the cold and rainy week which seemed to finish the young broods. Can your readers in other localities make a similar report? Certain it is that, around our diggings, there is a most extraordinary scarcity of these *annuals*.

One of your correspondents recently inquired how he could best preserve eggs. Let him pack them ends upward, in a cask, or barrel, with oats, rice shucks, or sawdust; head them up and place them in a cool place, taking care to *turn the barrel over*, end for end, every two or three days. Eggs thus packed can be easily kept for many weeks, if not exposed to extreme heat or cold.

In regard to raising plums, I have been quite successful, though living where the curculio feels quite at home. I depended mostly upon the trees when quite small. A plum tree soon comes into bearing. I have gathered heavy crops from trees of two or three inches in diameter. Of course the curculio is the only hindrance. I used to have a sheet tacked to a couple of poles, spread it under each tree morning and evening from the time fruit was the size of a pea until the pits were formed, and then jar the tree with my hand. The "little turks" fell as though they were lifeless, as indeed they very soon became in consequence of a smart pinch between my thumb and fingers. On a white sheet the eye soon detects them, lying curled up, shamming dead, and very much resembling raisin seeds. It is not much trouble to attend to a dozen trees for a month or so. By the time my trees were too large to jar with the hands, they were pretty well overrun with the black knot, so I removed them altogether, and put young trees in their places, which came into bearing in about three years.

As for the Black Knot, I know not what it is, nor have I ever seen any satisfactory information in regard to its cause. There is but just one remedy for it, and that not effectual; the knife. Spare not. The moment the excrescence pushes out in the bark, cut it off, and *cut deep*. Regard not the scar left behind. If a limb be badly affected, even though it be a large one, cut it entirely away and burn it. If the difficulty is in the main trunk, cut the bark quite down to the wood, without fear. A little spirits of turpentine applied to the wound does no harm, and if there be insects, as some contend there are, they will be surely killed. In this way only can the plum tree be kept in good condition. And as soon as the disease has spread quite over the main stems and branches, as it generally will in time, it is much better to remove the old and plant a young tree in its place. Although you cannot expect so large crops, the fruit will be fairer and better, while it will be much easier raised.

Canker worms are now busy at their work of destruction. They are not as plenty as usual, many of them, as I think, having been killed by the cold spell before mentioned. But there are a plenty left. By and by, when the green leaves have given place to the inevitable "sere and yellow" which marks their track, I want you to go with me some afternoon and I will show you the result—not of speculation—but of determination. I want you to look upon an orchard of over six hundred trees, in which you would become poor at hunting canker worms at a shilling apiece, while upon three sides adjacent, it is, as Captain Cuttle would say, "quite the reverse." *The trees have been protected*, in truth as well as in theory. And, having used your eyes, I want you to use your pen, and tell anybody and everybody that whosoever *will* can escape the periodical picture of desolation which we are so accustomed to see around us. Idex.

Newton, Mass., June 6, 1867.

SHEEP DISEASES.

We copy the following report of a talk upon this subject at a late meeting of wool growers in Michigan, from the *Prairie Farmer*.

Mr. C. E. Stewart being called upon, stated that he had lost quite a number of sheep for two years past, mostly ram lambs. Last year paid but little attention to it; this spring had paid much attention to examining the cases, and practicing upon them. Last year his sheep commenced dying after they had been on grass about four weeks. Thought at the time the trouble was with their kidneys. The symptoms observed, were falling out of the flock, stopping by a fence in a drooping weak condition; would revive and then be worse. They were inclined to drink heartily just before death took place. Examinations showed the vital organs healthy; but found in the small intestines innumerable small worms, resembling hair in plastering mortar. Found linseed oil and turpentine in doses of two ounces recommended for worms; gave it to four sheep, and

they died in twenty minutes; reduced the dose one-half, and gave it to more of the flock —no more died.

This year the same symptoms appeared, before I turned them out; got the preparation again, gave it to one, it died in five minutes; found very few worms, but the liver was seriously affected; very rotten and brittle; little blood in the animal, and that of poor quality. Consulted family physician, and concluded the trouble was what is known in England as the "rot," but did not in all respects answer the description; gave tonics, also whiskey, gentian, &c ; they had no effect except for a short time. Found salt recommended, tried it vigorously—a tablespoonful at a dose—have now lost none since commencing to give it. Have noticed the following symptoms: Ears and nose cold, eyes and skin pale white, like a dead animal's skin. Wool does not seem to be affected, as it is bright and oily when removed from a dead sheep. Would caution every body against the turpentine and oil remedy.

Mr. Martin had noticed the attacks in his flock among the yearlings; tried to keep them up, by high feeding, but they commenced dying April 1st, lost all the two-year-olds. Found a swelling under the lower jaw, a spongy, watery mass, that when lanced discharged a clear liquid, freely. On examining sheep that died, found this watery substance extending over the whole body, between the skin and flesh; examined brain, found nothing unnatural.

Mr. Thompson of Ohio was one of the unfortunates; had lost valuable sheep, found the presence of grubs in the head, thought that was the trouble. By the advice of a neighbor, tried tobacco juice and turpentine, (injected into the nose a tablespoonful each,) on the balance of flock; lost no more.

PRUNING DWARF PEARS.

This subject was pretty freely discussed by the horticulturists of Cleveland, Ohio, at a late meeting.

Mr. Marshall said that some kinds of pears needed more pruning than others, but generally the neglect of pruning would soon result in the death of the tree, as the tree, if left to grow without check, would kill itself.

Mr. Elliot said that the public generally wanted tall, straight trees, and in conformity to this, the nurserymen had got to trimming up the stems, leaving a few lateral branches so as to form a little top. And again, they grow them so thick in the rows that they had but little chance to form that bushy head which was desirable. However, taking the tree as it came from the nursery, getting thrifty one-year-old trees, if possible, he would cut back severely—that is, cut back all the laterals to one or two buds, and cut the top down enough to make the dormant buds in the stem near the ground, start; this would leave nearly a naked stem about two feet high. The first year, he would do no more to it; the second spring he would cut back the last year's growth to two or three buds, leaving the tree in a round, bushy shape, getting the head as low and near the ground as possible. This process of spring pruning was to be continued until the head was formed, with perhaps some exceptions, to wit, as one of them, if a tree grow very strong, as was sometimes the case, throwing up shoots four, six or seven feet long, he would leave them until about the 20th of July, and then cut away about two-thirds of the previous year's growth. The reason for this is, that if cut in the spring, the vigor of the tree would cause a new growth of strong, thrifty shoots; while, if left until the 20th July, the growth would be checked, and the formation of fruit spurs induced. For the same reason, he would do much of his pruning by pinching in the ends of the limbs.

From Once a Week.

JULY.

BY JULIA GODDARD.

Throughout the house a dreamy stillness stole,
The watch-dog slept, scarce buzzed the lazy fly;
The clock ticked on with solemn measured tone,
Counting the drowsy moments of July.

Through quaint-shaped panes the mellow light crept in,
And traced rare brown-gold shadows on the floor;
The air was heavy with the scent that hung
Around the clematis that framed the door.

Through the clipped arches of the olden yew
I passed, and very silence reigned around;
As though the earth by some enchanter's spell
In magic sleep were bound.

The peaches slumbered on the garden wall,
The dew upon their crimson cheeks was wet;
The red-ripe strawberries gleamed amid their leaves
Like rubies in a ducal coronet.

The feathery wheat stood still as fairy spears,
Borne by a million transfixed sentinels;
The harebell was asleep, nor woke to ring,
In honor of July, her tiny bells.

The flame-tongued nightshade drooped her purple pride,
Yet held entranced the hedges where she clung;
And wearied there her trails of blossoms white
The wild convolvolvus flung.

The river with its waveless waters lay
All motionless as a pure crystal sea;
Another landscape painted on its tide,
With spire, and sail, and tree.

Close by the rush grown bank a boat was moored,
So still, it stirred not on the river's breast;
The world was hushed, and Nature at my feet
Lay wrapped in perfect rest.

Like to the princess in the story old,
She in her beauty slept,—oh, sight of bliss!
Waiting until some poet heart should come
And wake her with his kiss.

O wake! O wake! and breathe into my soul
Thy soul, that rightly I of thee may sing;
Or—sleep for ever, in thy beauty veiled,
'Neath July's wing.

—Prof. Nyce admits that neither strawberries nor peaches can be preserved in his fruit houses. Catawaba grapes have been kept till the next crop.

Ladies' Department.

DOMESTIC ECONOMY;

OR

HOW TO MAKE HOME PLEASANT.

BY ANNE G. HALE.

[Entered according to Act of Congress, in the year 1866, by R. P. Eaton & Co., in the Clerk's Office of the District Court for the District of Massachusetts.]

CHAPTER V.

HOUSE PLANTS AND THEIR CULTURE.

VIOLET.—The name of this pretty little flower is of Latin derivation, and refers to the ordinary home of the plant, by the wayside, whence it is frequently gathered in the country. It is found in all countries of the temperates zones, and on the mountains of the tropics. It has always been admired for its simple beauty and its fragrance. A wine was made from the blossoms by the ancient Romans; and sherbet, the favorite beverage of the Turks, is composed of a syrup of violets mingled with water, and is said to be very delicious. A Mohammedan tradition declares that "the excellence of the violet is as the excellence of El Islam above all other religions." The flower grows in great beauty on the islands of the Mediterranean; and Pæstum of the old time boasted of its violets, which, according to Rogers, the English poet, were as proverbial as their roses.

The violet is one of our commonest, as well as prettiest, wild flowers,—more than twenty different species have been recognized in the flora of North America. It is perhaps better known, and more universally admired, than any other native production; and our poets have not been backward in singing its praises. Alice Carey, in recounting "The verdurous season's cloud of witnesses," includes "The buds that ease hearts lovelorn;" and compares the setting sun amid clouds to

> "Yellow violets springing bright
> From furrows newly turned."

Mrs. Sigourney speaks of

> "The healthful odor
> Of the bright eyed violets;"

and of

> "The bowed violet, that through chilling scenes
> Turns to the sun that cheered it."

Street says—

> "The violet, nestling low,
> Casts back the white lid of its urn,
> Its purple streaks to show.

Bryant calls it, as do many of the English, to distinguish it from the heart's-ease, "the May violet." He also terms it "That delicate forest flower with scented breath, and look so like a smile." And Whittier sings of "The violet sprinkled sod," and of "The amber violet's leaves." But, by far the most beautiful tribute has been paid to the flower in the verses of J. Russell Lowell, from which I cannot forbear making the following extract:

> Violet! sweet violet!
> Thine eyes are full of tears.
> Are they wet
> Even yet,
> With the thought of other years?
> Or with gladness are they full,
> For the night so beautiful,
> And longing for those far-off spheres?
>
> Thy little heart, that hath with love
> Grown colored like the sky above,—
> On which thou lookest ever,—
> Can it know
> All the woe
> Of hope for what returneth never?
> All the sorrow and the longing
> To these hearts of ours belonging?
>
> Out on it! no foolish pining
> For the sky,
> Dims thine eye,
> Or for the stars so dimly shining.
> Violet, dear violet,
> Thy blue eyes are only wet
> With joy and love of Him who sent thee,
> Which make thee all that nature meant thee."

Any of our violets—white, blue, or yellow—repay transplanting to the garden, or cultivation in the house, if set in soil of loam and leaf-mould, and kept cool and shady, except when near blooming. But the dark, purple English violet, which has been frequently made to bear double flowers, is most generally seen among parlor plants; or the Neapolitan violet, whose flowers are larger and exceedingly fragrant, though of a light color. These foreign flowers are raised from division of the root, or cuttings taken in June, and covered with a tumbler, and afterward set in a soil of sand, loam, and decayed leaves or other vegetable mould. The pots should be well drained with sherds. They need water often, usually twice a day; but very little at a time; if the water is allowed to remain about their roots they will die. Our native violets should be kept damp, always, also, but not wet.

WALL-FLOWER, called also *gilliflower*, a corruption of July flower, because the plant is generally ready to bloom in that month when cultivated out-of-doors. It grows wild on the old ivied walls of ruined castles, and on the chalky cliffs by the sea-coast, in England,—hence it is called wall-flower, and cliff-flower. In ancient times the English ladies, or dames, as they were then styled, took such pleasure in cultivating this plant and in wearing its blossoms as decorations, that the title of dame's violet was given it. It was regarded by the troubadours as an emblem of faithfulness in its habit of clinging amid ruin and desolation to the spot that first tenderly cherished it, and it is often mentioned in their madrigals and ballads. It also grows wild in Arabia, and is greatly admired there.

The blossom of the wall-flower is cruciform—shaped like the Maltese cross—having only four petals in its natural state. By cultivation the stamens have been changed to petals—thus making it double; as is often the case in plants—the violet, for example. But from being raised in unsuitable soil, or by neglect, they are apt to return to their original habit of bearing single flowers. The wall-flower, when raised from seed, seldom blooms till the second year in the garden; but plants can be potted in September, and, with proper care, will bloom in the house as winter flowers, and then be transplanted to the garden in May, when cuttings should be taken to form other plants for the next winter. These cuttings will be obtained by pruning the parent plant, which it will then need; and care must be taken that both the old plants and the new cuttings are set in very rich, light soil, or they will become single. A bed of rich loam and decayed vegetable matter, or leaf-mould, with the addition of sand—to make it light—will be the most suitable arrangement for them till the fall. Then take what you wish for the winter, and fill pots one-quarter full with cinders, and upon this an inch of compost made like that which formed the bed, and remove to this the plants, with a ball of soil about their roots. Fill in the compost lightly, and press it gently with the potting-stick, to make it firm. Water them often, but little at a time, and keep them in the shade a week or ten days; then let them have the sunshine. In October bring them to the parlor, and give them liquid manure, as you do pansies, and verbenas, and petunias. Those bearing dark-colored flowers are the most hardy, as also the most fragrant; and are more fragrant at night than through the day. With proper care a wall-flower will live several years and bear an abundance of beautiful flowers. Stocks, sometimes called stock gilliflowers, are often confounded with the wall-flower, which they resemble in some respects; but they belong to a different genus, and are only annual plants,—very seldom living beyond their first summer.

We have now gone through our list. It was not intended to include all plants that are cultivated in the house, but I trust that the selection presents sufficient variety, both of form and color, to suit the most fastidious. If any of my readers have parlor plants which have not been mentioned here, I hope they will try to acquaint themselves with the propensities and habits of each one, individually; and, by comparing these observations with the descriptions and directions furnished above, be enabled to give every plant its proper nourishment and care.

When you have decided what plants to cultivate, and have arranged them so that they may receive light, air, heat, and water to the best advantage, don't forget that regularity in supplying these requisites is of the utmost importance. Set apart a particular portion of each day to attend to them, and let that time be as early as possible after your morning duties to your family have been performed. Once a week a double portion of time will be needed, to give both pots and plants a thorough cleansing; and that is all that they will require besides these few minutes in the morning of every day;—unless you have among your number those whose full-blown flowers need a change of position before the sun reaches its noonday height, or others that must have a second watering just before it sets.

In the cultivation of plants you wish not only to gratify your own taste, but to encourage in your children a love of beauty and order, and to furnish them with subjects for profitable conversation and high and holy thought. So you will endeavor to gather from every source, personal observation, intercourse with friends, and reading of books and papers relating to the matter, all information that can add interest to your plants or to their culture. Let the boys and girls, themselves, when they are old enough, help you in caring for the flowers. As an especial favor, allow them to claim ownership of one or more plants; it is such a proud day for a child when he, or she, can say of anything living or growing, "It is my very own—to use as I please," that I wonder parents do not earlier and more frequently grant them this harmless indulgence. They are always glad of the means thus furnished them for being generous and benevolent; and find much happiness in bestowing a pretty flower on a poor child who has looked with covetous eyes upon the tempting display in the window; and in preparing little surprises of floral gifts for father and mother, or other members of the family, on birthdays and other festivals. With what delight, too, they make tiny bouquets, or gather a few geranium leaves for a beloved teacher, or a sick friend. And, then, if death comes, and their bright faces are shadowed by solemn thoughts, how many beautiful lessons of love and hope and trusting faith the flowers can teach them, as their trembling fingers weave them into emblems of sorrowing affection. And as they lay these gifts upon the last resting-place of loved ones, will they not be reminded of the great mystery of the resurrection; and calling to mind the insignificant seed from which so much loveliness has arisen, can they not more clearly comprehend the meaning of the blessed words, "God giveth it a body as it hath pleased Him. It is sown in corruption, it is raised in incorruption; it is sown in weakness, it is raised in strength; it is sown a natural body, it is raised a spiritual body. For this corruptible must put on incorruption, and this mortal must put on immortality."

If the children thus share in owning your plants, they will be quick to render assistance in promoting their welfare,—and this will not be slight, nor of small importance. A girl of seven years old can take as good care in watering plants, and in clearing them of insects, as a grown person, and

this is the usual daily work. And a boy, as soon as he can use a jack-knife, will find that he also can render important service. First, he can make straight, smooth rods—which may be stained some dark color—to which his mother will want to tie her geranium branches, or petunias, or fuchsias. When he has made himself perfect in these he can try his hand at making trellises, or frames, for calceolarias or heliotropes. If he cannot smoothly cut a square, straight strip of wood, almost any house-carpenter will give him such, which he has thrown aside with his refuse trimmings. It should be about an inch wide, and from two to three feet long, according to the height the plant is expected to attain. Bore in this a row of holes about an inch and a half apart. Then get a long, slim cane of rattan,—such as was once used in making bonnets,—or a wire, and draw it through the holes so as to have loops of the cane or wire on each side of the wood. Whittle the end of the wood to a point, that it may enter the soil easily; and then stain the frame and it is finished. An older boy will be proud to make his mother a flower-stand. Of these she will need two, if not more; one like that mentioned in Chapter II, and another, on which to place a camellia, a calla lily, or a rosebush when in bloom. For this last, which is intended to accommodate but one flower-pot, a very pretty plan is the following:—Saw from a round log of wood two smooth slices, about one inch thick,—they should also be one foot in diameter. Then from a slender pole—an inch and a half or two inches in diameter—a piece about twenty-seven inches long. These materials should be of the heaviest wood you can get. Nail the centre of each circular piece to an end of the piece sawed from the pole. Get, then, smooth hoops from a flower barrel. Unclasp one and cut an end squarely and nail it with small nails to the edge of one circular so that the hoop shall curve inward, and be nailed to the centre of the pole, and then curve outward; having cut it just long enough to reach the other circular, to which that last end must be nailed. Six strips, at equal distances, should thus be nailed to the round top and bottom; and thus be curved in and nailed to the centre of the supporting pole. There should then be a strip of the hoop nailed around the top and bottom, to cover the ends of those strips, and the form of the stand is made.

It should be stained to look like black walnut. For this, get red ochre and lamp-black, and mix them with water—to which a little glue may be added. Cover the stand thinly with this staining. You can add to its beauty by laying along the edge of the circulars, and upon the curving strips, imitations of carved work. For this make putty of whiting and oil, with which lamp-black and red-ochre must be mixed, to give it the dark brown color of the staining used. Work the putty thoroughly, and let it be quite stiff. Now your sisters can help you; in fact, will want to do all the rest till the stand is finished, for the putty must be rolled out thin, like pie-crust, and cut into shapes. Your mother will let you take a few ivy or geranium leaves for patterns. These must be laid upon the sheet of putty, and gently pressed upon it, so that the veins and indented edge of the leaf is plainly imprinted. Then, with a sharp knife, cut out this impression, and you will have a perfect copy of the leaf. Cut a number of them, and then roll bits of putty, for stems, in long slender rolls; and place these upon the stand to represent the branches and stems of vines creeping around it and up the strips of the centre; make a few coils of the smallest rolls, to imitate tendrils, and intersperse them with the stems. Then bend and curve the leaves to look natural, and lay them along the vine, occasionally putting among them clusters of small balls of putty, in imitation of berries. The sheet of putty from which the leaves are cut should be twice as thick as if rolled for pastry; and when rolling it, in order to keep it from clinging to the hands, or to the roller, a little of the dry materials of which the putty is made should be sprinkled upon it. When you have finished, set the stand in a cool, dry place till the work is hardened.

A shelf for the corner of a room, on which to set a large plant, or a pot of ivy when you wish to trail its branches over the walls, can be made from a three-cornered piece of board; having a border of this imitation of carving arranged on the edge of its longest side, and fastened up by screwing the other two sides to cleats, which are themselves screwed to the two walls. The small bracket-shelves, that are cut in open figures of scroll and leaf-work, from cigar-boxes and other thin wood, answer very well for small light pots, and have a very pretty effect when used for that purpose.

And here is another design for a stand to hold a large pot. Take a piece of board fourteen inches square; upon this, nail another twelve inches square and on this one ten inches square. These nail to a stick of wood six inches in diameter and two feet long, for its pedestal. On the top of this wooden pillar nail a block—two inches thick—of octagon shape; or, two pieces of board, one upon the other, of the same form, and one foot in diameter. Then from each side of this head-piece should pass narrow strips—fence pickets are of the right size, to the upper layer that forms the foot-piece; these give the structure the appearance of an eight-sided column. You wish it to resemble stone, so you must get—some day after it has rained—the grey and greenish lichens from rocks and old fences; these are easily scraped off when they are damp. At the same time gather some red-cup, and white coral, and star moss; as well as the soft, green, velvet kinds; and a few alder cones, and acorns in their cups. These are to lie upon the base of column. Then make a paste of rye-meal and glue water. Boil it well, and when it is cool spread a coating of it upon the wood, and arrange your lichens according to your taste; and in the same way, the mosses and other little things.

If you can find any of the hanging, gray-beard moss on dead trees, or decaying branches, place a little of it here and there about the edge of the top of your column. A stand made in this way is quite pretty.

For holding most of your plants, the larger stand and tray, mentioned in a previous chapter, will suffice, and these, too, can be of domestic manufacture, by exercising a little ingenuity. If you have more than eight pots, the tray should be two and one half feet long and two feet wide. Around the sides of the tray the smaller pots should be placed; and a small wooden form, six or eight inches high and eighteen inches long, should occupy the vacant space in the centre, on which the larger pots are to be set. All these things can be done by the boys. They can also get the peat, or bog soil; and spread it for drying; and then the sand to mix with it after it becomes dry—for the bog-earth, or peat, always needs sand with it to make it light and fertile. And the leaf-mould they can make by gathering the leaves that fall from the trees, and any other decaying vegetable matter, and stirring them over occasionally; mixing with the heap a little lime, in the fall, and then in the spring stirring it again, and sifting out the most decayed to put with the other materials when the plants have new soil given them. And they, and the girls too, can make themselves very handy at that time; the old saying is—"Many hands make light work:" it ought to be "pleasant" work, for the most disagreeable occupation becomes delightful if those we love share it with us.

A few words more ought to be said about insects. If you find that, with all your care, they still trouble your plants, just give them a dose of *bitters*. Buy an ounce of quassia wood at the druggist's, and boil it in three pints of water till there remains but one quart of the liquid. Dip the tender shoots of your plants in this, after it has become cool, and wash the rest with a small mop made of a bit of sponge; and in a few minutes wash them over again with clear water,—it injures plants to allow this liquid to remain upon them. If this does not remove them, try tobacco in the same way—let them see that you are determined to fight it out on that line. I should like to tell you of a battle I had once with the Aphides, when, as the history-books say, "the enemy was repulsed with great slaughter," and all the "weapons and munitions of war" that I possessed, were an old squirt-gun and a bowl of tobacco tea. But I found that prevention was far better than cure; for my poor plants for the remainder of the winter looked as miserable as any refugees from Rebeldom; and I have been careful to keep a plenty of trusty spies and scouts on the track of the enemy ever since,—and believe that, in case of invasion, the guerrilla method of warfare is the surest and safest for flowers.

The treatment of plants that had been frozen was spoken of in a former chapter, but one important point was accidentally omitted. All plants that are frozen should not only have their pots placed in cold water, but the plants themselves should be sprinkled with the same, and kept from the sunshine until the leaves resume their natural appearance. Ferneries, that are now so fashionable, deserve a more extended notice than I have been able to give them—at some future time they shall receive attention. And the preparation and arrangement of several articles of floral decoration, ought properly to be considered under this head; but the length of this chapter has, I fear, already taxed the patience of my readers too much,—so these also must wait till a more convenient season.

NOTE.—Although the author has cultivated House Plants successfully during the past twelve years, she has not relied solely upon her own experience in the preparation of these papers, and she takes this opportunity gratefully to acknowledge her indebtedness to several sources for much valuable information upon important points.

HOUSEHOLD ECONOMY.

CONTRIBUTED FOR THE NEW ENGLAND FARMER.

MESSRS. EDITORS.—The two following receipts for making hard soap were given me some eight years ago, and as I have never seen them in your paper, I send them to you to use as you think best:—

Hard or Chemical Soap.

Six pounds of clean fat or tallow; six pounds sal soda; three pounds of lime and four gallons of water. Melt the fat, dissolve the lime and soda in boiling water, and let it remain over night to settle; then strain the water into the grease, not disturbing the sediments, and let boil until done or until thick; take it out to cool. When cold, cut in bars.

Poor Man's Hard Soap.

Put in an iron kettle five pounds unslacked lime; five pounds sal soda; three gallons soft water; let it soak over night; in the morning pour off the water; then add to the water three and a half pounds of grease; boil till thick; turn in a pan to cool and then cut in bars.

These receipts will make a large quantity of good hard soap, but not equal to that made with the Saponifier or concentrated lye. I have used that for making hard soap for six years, and should not know how to get along without it. Have tried all four of the receipts given for using it, but like the third one best for washing clothes, but it shrinks more in drying than others.

Washing Soap.

Two pounds bar soap, (made from the Saponifier); one ounce borax. Shave the soap fine. Put that and the borax in one quart of water and simmer until well mixed. One-fourth of a pound of this is sufficient to do a washing for six persons.

I have used this soap with the Union Washing Machine and Wringer, for several months, and can do a washing in one half the time with less

soap, less water and less wood, than any other way I ever tried, and think no one who has given them a thorough trial would part with them for twice their cost, if they could not get more like them. A FARMER'S WIFE.

Dudley, Mass., 1867.

Brown Bread.

A pint basin twice heaping full of corn meal, which is ground very coarse, scald with boiling water, using as little water as you can, with much stirring, get the meal all wet; when cool add a pint dish not quite even full of rye meal; one teacup of hop, or hop and potato yeast; one cup and a half of molasses. Mix very soft, with tepid water. Rise about two hours or till it cracks, then bake four or five hours, very slowly at the last. G.

Randolph, Vt., 1867.

Rice Pudding.

Four tablespoons of rice; one quart of sweet milk; boil until tender, and the milk is absorbed; then stir in the yolks of four eggs, well beaten, and three tablespoons of sugar, with the grated rind of one lemon. To the whites of the eggs, well beaten, add eight tablespoons of powdered sugar, with the juice of the lemon; lay it over the pudding and return to the oven until slightly browned; eat cold.

Queen of Puddings.

One pint of bread crumbs; one quart of milk; teacup of sugar; yolks of four eggs; a little salt; a small piece of butter. Lemon improves it. When baked, spread over this a layer of jelly, or any sweetmeat. Beat the whites to a froth; add a little white sugar; spread over the pudding, and return to the oven until slightly brown. To be eaten cold, with sweet cream.

White Cake.

One and one-half cups of sugar; three of flour; one-half cup of butter; one cup of milk; two teaspoons of cream tartar; one of soda; three eggs; beat the whites separate, sugar and yolks together.

Sponge Cake.

Seven eggs; beat the whites and yolks separate; one half pound of flour; three-fourths pounds of sugar; one tumbler of cold water; boil the sugar and water together until it boils clear; let it cool before putting it with the eggs. This is sufficient for two loaves.

Feather Cake.

One cup of sugar; one-half cup of sweet milk; two eggs; not quite half a cup of butter; one teaspoon of cream tartar; one half teaspoon of soda; two cups of flour; nutmeg; bake in shallow tins.

Soft Cookies.

Two cups thin cream; two cups of sugar; three eggs; caraway; flour, sufficient to make it as thick as pan-cakes; two even teaspoons of saleratus; drop with a spoon on buttered tins, and bake fifteen or twenty minutes.

Cookies.

One cup of butter, well mixed with two cups of sugar; three eggs; one cup of milk; one teaspoon of saleratus; salt and spice to your taste; flour enough to mould it. NELLIE.

Hardwick, Mass., Feb. 17, 1867.

REMARKS.—Several other correspondents have our thanks for favors which will soon find a place. ED.

For the New England Farmer.

RHUBARB.

The season has nearly come for the general use of this delicious article, and perhaps a few hints to young housekeepers, about its preparation may not come amiss.

Most people like rhubarb, and it is very extensively used; and still but few know how to prepare it properly.

Sauce.

Wipe the stalks very carefully with a damp cloth, and then with a dry one. Never peel it. It destroys the flavor to remove the peeling, and spoils the color. Cut into pieces about half or three-quarters of an inch long. Put into a porcelain lined kettle or a new, bright tin, not an *old black one*; add as much white sugar as your judgment dictates; cover with boiling water; put a plate tightly over the dish and cook until quite soft, never touching it, as stirring it mashes it all up. When done (if cooked in a porcelain-lined kettle); set in a cool place, undisturbed, till tea time, then slide it carefully into your glass dish, and you will have a nice looking sauce with a clear pink jelly-like syrup, making it look very different from the mass of little strings, usually called rhubarb sauce. If cooked in a new tin, it must be slid out into a bowl or pudding-dish as carefully as possible and not transferred to your glass dish until cold.

Pies.

Wipe as for sauce, line a deep plate with good crust, rolled very thin, and cut the rhubarb in as you sometimes do apples. Add one cup of white sugar to a pie; three tablespoons full of water, two of flour, sprinkled over the top; cover very tight —tucking in the edges to keep in the—juice and bake brown. Eat for tea or the next morning. Rhubarb pie over one day old is poor eating. White sugar is very much better to use with rhubarb than brown, as it makes a richer syrup and gives a very different flavor. By cutting your rhubarb and putting boiling water to it, and letting it cook about five minutes, and then pouring off the water and filling your pie with the rhubarb thus deprived of half its acidity you need use only a large half cup of sugar. Many prepare it so, but I think it makes the pie flat and takes away the good flavor.

Rhubarb Dumpling.

Wipe your rhubarb and cut as for sauce. Make up a soft dough as for cream tartar biscuit; one

quart of flour, one teaspoonful of soda two of cream tartar, a little salt; mix with water or milk, just which you have the most of, and into the dough stir the rhubarb as you would plums into cake; steam one hour and a half. Eat hot with sweet sauce. A pint bowl full of cut rhubarb is enough for a quart of flour.

Mrs. S. B. Sawyer.

For the New England Farmer.

DOING WITHOUT "HELP."

I have no need to inform you that writing for papers is not my forte, but there is one subject that is of importance to housekeepers, and it is with them I wish to have a little discourse, and I know of no more ready mode of communication than through the columns of our favorite paper, the New England Farmer.

For the past quarter of a century there has existed a growing evil, until it has become one of the most annoying trials incident to housekeeping. I speak of *obtaining* and *retaining* good help. Since the custom has become so general of delegating to others the power and oft times the right of the kitchen, we have been subjected to much inconvenience in procuring *trusty, faithful* persons, who were reliable. If, peradventure, an acceptable one is found, it is at an exorbitant price for wages, so that with breakage, waste and losses, the expense is not much short of from seven to eight dollars each week. Now, sir, to obviate, as far as possible, this difficulty, and at the same time to preserve the placid tempers of our husbands, a few families are trying an experiment of running our own train (so to speak). Three families of us have dismissed our Katharines and Marys, and have rolled up our sleeves and we make things hum again,—and it is a wonder to ourselves how admirably we succeed. Our little fancied troubles recede as we approach them, and often do we break out in a hearty laugh at our success. And then, too, our health is much improved, and although at times a little fatigued, yet the necessary exercise has repainted our sallow cheeks (so they say), and *ennui* is banished from our midst. And more than all, the approving smile of our husbands well pays us, for *trying to do without help.* We have made arrangements with a faithful person to come occasionally to wash, iron and clean house, but aside from that we attend to the wants of our families. It is now over a twelve-month and I pronounce it a success. We feel competent to judge, as the four seasons have passed with their sequent labors, and the abatement of the tax on our nerves and purse renders it an experiment worthy the trial.

I venture to say, if any of our lady friends could be induced to *do their own work* six months, they would hardly be persuaded to have so annoying and expensive an appendage in the house as what is *called* help. Fannie.

Elmwood District, Middlesex Co., Mass.

P. S. It was not my intention to have added a postscript to this note, but woman-like I have a *last word,* which is that much depends on the co-operation of the family to have the experiment succeed. If any other of your readers have made the trial I wish they would relate their experience for the benefit and encouragement of others. F.

Remarks.—Bravo! Our fair correspondent is entitled to a hearing, for she practices what she preaches. She has found the secret of *independence* in her household matters, and so long as health is spared her and her household cares are not multiplied beyond a reasonable extent, need have no reason to repent her "strike" against incompetency and wastefulness on the part of her "help." Of course there is a limit to her ability, and of course there is something to be said in favor of "help," but, as the majority of families, and especially those who reside in the country, are situated, Fannie's course is praiseworthy, and has our cordial commendation. Be it understood, however, that we consider no husband deserving of such a wife, (or of any wife at all,) who will not do his full share of the multiplicity of *chores* and errands willingly and seasonably. This, alone, will lighten housework of nearly one-half its cares, and leave the wife time for attention to something besides the routine of the kitchen and chamber, and give her opportunity for recreation, without which body and mind will suffer. Ed.

THE
NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

NEW SERIES. Boston, August, 1867. VOL. I.---NO. 8.

R. P. EATON & CO., PUBLISHERS, OFFICE, 34 MERCHANTS' ROW. MONTHLY. SIMON BROWN, S. FLETCHER, } EDITORS.

FARM WORK FOR AUGUST.

"Nay, tell me not of lordly halls!
My minstrels are the trees,
The moss and the rock are my tapestried walls,
Earth's sounds my symphonies."

N ENGLAND, where the small grains, such as rye, barley, oats, but principally *wheat*, are the staple crops, AUGUST is the great Harvest month of the year. Our great harvests commence in *June*, when we begin to secure the hay crop, which is even then lying down on rich grounds. The gathering of this important crop continues through *July*, *August* and even into September, in some parts of New England, where some of the late meadows are left uncut up to this late season. We have seen good fodder taken from them during the first week of the latter month.

AUGUST is the time when most of our cereals are harvested—the rye, barley, oats and wheat. In securing the grains, the practice used to be to let the straw stand until the berry became ripe, hard, and changed from its milky appearance to a dark brown color. In this condition some portion of the grain—too much to be lost—would be shaken out every time the straw was handled, in cutting it, gathering, tying up, loading and unloading,—and what renders such an operation more objectionable, is the fact, that when the grain is left to harden on the stalk, it is not so good as when cut from *seven* to *fourteen* days before it is thoroughly ripened. It is lighter, per bushel, is not so nutritious, and if ground, the flour is not so "handsome" and will not make so good bread, as flour will from grain cut earlier. This fact has been well settled by most careful experiments.

But our prime and splendid harvest is that of *Indian corn*, which is begun in September, and frequently does not end until some time in November. When allowed to stand so late, the grain receives no injury unless the stalks are broken down and the grain lies upon the ground, but the fodder is considerably reduced in value. This crop is not only exceedingly valuable in itself, but is valuable in the preparation of sod lands to receive the smaller grains, —for it flourishes best on new, or sward lands. Plowing and hoeing the crop three or four times during the summer, pulverizes, enriches, and admirably prepares it for wheat or any of the smaller grains the following season.

The meal from Indian corn is a universal food. All animals like it—biped and quadruped; horses, oxen, cows, calves, colts, swine, poultry, dogs, even packs of hounds that are kept for the chase, are frequently fed on a warm, Indian bannock, morning and night. It is wonderful how many ways it can be prepared so as to be not only nutritious but exceedingly agreeable to the taste. In "corn

dodgers," brown bread, "Indian puddings," corn cake of a dozen different patterns, corn fritters, corn starch, and many others which the "cook book" would tell us about if we had time to turn to it. The stems and leaves, also, of the corn plant are largely used in a green state for feeding to milch cows, and when dried they are our best fodder, next to English hay. A crop every way so valuable should not be checked by a growth of weeds, or by neglect of hoeing and otherwise stirring the soil, and especially if the season is a dry one.

Laying Land to Grass. As the grass crop is an important one, it should be a matter of constant care to see that the land devoted to it is in a proper condition for its growth, by drainage and depth and richness. A considerable portion of the lands which are mowed are suffered to remain until they are so much exhausted that the crops they produce will scarcely pay for going over the ground. This may be prevented by a light annual top-dressing of fine manure, but it must be commenced *while the roots are in a vigorous condition.* There is no better time, perhaps, to renew old grass land, or to reclaim low lands, than the month of August. If properly managed, it requires but a single year to change a hard and unproductive field into a productive one.

In order to accomplish this no more must be undertaken at once than there is team and time sufficient for the work, and manure enough to give the grass a vigorous start and sustain it well until the field gets a top-dressing. The work is often attempted with teams too weak and plows too light. In trying to get a sufficient depth, *one* gets broken and the *other* tired, and then come the doubts whether it will ever pay to reclaim an old meadow, or plow deep and subsoil upland.

Plow eight to twelve inches, harrow thoroughly, level with great care with hoe and spade, then enrich with fine manure, sow seed plentifully, say *eight* quarts of herds grass, *one* bushel of redtop, and early next April *eight* pounds of clover per acre. In a soil thus prepared, the seeds find all things necessary for a quick and healthy germination and rapid growth. The air, light, heat and moisture are admitted in such proportions as the seeds require to give them a sure and early start. Thus by deep plowing, fine manure, and thorough preparation, little or no loss is sustained in seed, while a good crop is quite certain, let the succeeding season be wet or dry.

Seeds. Gather seeds as they ripen, and save only those that are plump and perfect for your next year's use. They will require attention every day. If you do not give it the birds will.

Army Worm. You will probably find them on the apple trees, side by side, like a platoon of soldiers, eating clean as they go—ugly looking, repulsive customers. Cut off the twig that holds them and put your heel on it. They ought not to be allowed to multiply.

Milch Cows. In dry seasons, in many pastures, cows lack water, and during the hot, sultry days, they suffer, and in consequence the milk pails are not filled at night. When you are exceedingly thirsty think of this, procure a refreshing drink, and then go directly and ascertain if the cattle in their pastures are abundantly supplied with pure, cool water.

Budding. August is a suitable time for this work. Put the boys to practice in budding apples, peaches, pears, plums, and any thing that requires it.

Weeds. Do not allow one in the garden, and none around the outside rows of the corn or potato fields.

PAGE'S PUMP AND SPRINKLER.

This is a new pumping and sprinkling apparatus, that, in our opinion, excels anything of the kind heretofore invented. We have now four or five different pumps or sprinklers, intended for house, garden and hot-house use, but none of them equal to this in ease of operation or efficiency of work. It is small, light to carry, easy to operate, and adapted to almost every use, from that of sprinkling the most delicate plant, to dashing the water forcibly against dirty windows or carriages.

Water can be spread with it so as to fall in a fine mist over a space from two inches to ten feet square, or changed instantly to a "coarse spray" or a "single jet," and thrown thirty or forty feet.

It requires no change of nozzle, and in our experience with it, it has never clogged or needed cleaning out. It is a beautiful and useful invention.

Nothing that we have seen is so admirably

adapted to sprinkling plants that are infested with insects, to sprinkle floors, grass plats and borders, flower beds, strawberry patches, &c., &c., and in case of fire inside of the building it would be of great service.

PRICES OF FARM PRODUCE.—The New York *Journal of Commerce* gives the following table of prices of farm products at New York on the first day of May in each year, for the past twelve years:—

	Cheese, ₱ lb	Butter, ₱ lb	Pork, ₱ bbl	Wool, Merino.	Hops, ₱ lb	Hay, ₱ cwt.	Corn ₱ bush.	Flour, ₱ bbl.
1856 .	.10c	.20c	$15.50	.48c	.09	$0.80	$0.62	$5.50
1857 .	.13	.27	18.90	.56	.10	.75	.80	6.00
1858 .	.08½	.25	15.35	.37	.08	.45	.73	4 25
1859 .	.10	.22½	12 75	.56	.13	.75	.86	5.50
1860 .	.10	.18	14.25	.55	.10	.95	.82	5.50
1861 .	.07	.16	13.25	.47	.16	.80	.67	5.20
1862 .	.08½	.18	10.00	.49	.15	.65	.58	5.00
1863 .	.12	.19	13.00	.78	.20	.80	.94	6.00
1864 .	.17½	.31	23 87	.77	.28	1.60	1.38	7.10
1865 .	.20	.35	25 00	.70	.35	.90	1.48	6.90
1866 .	.20	.50	24.00	.62	.65	.60	.86	7.10
1867 .	.19	.28	19.00	.65	.60	1.90	1.40	10.79

For the New England Farmer.

WORN OUT SOIL.

Much is said of the worn out and exhausted soil of New England, of our pastures covered with wild juniper, of our scanty crops of grass in the fields, of our short crops of corn, wheat and general field crops; and the cry comes up on every side that farming in New England will not pay.

Our fathers took possession of a soil rich in vegetable humus, formed by the primeval forests which had nourished and protected the soil for long ages in the past. The forest gave way to the woodman's ax; the fire passed over and consumed the wood and all surface vegetation, and the result was the ash was left. This the rains quickly dissolved and washed deep into the soil, or it was taken off in crops and no fertilizing material returned; leaving, as a consequence, an exhausted soil.

Our ancestors did not understand the modern usages of composting, manufacturing, and saving manures. Neither did they require it, for land was cheap. If one field was exhausted, it only required to move a short distance to another, to go through the same system again.

Many times, in contemplating the subject, I have almost been struck with wonder that our soil has held out as well as it has, and that as a general thing it produces as much as it does, at the present day. When I have thought of the amount of flesh and bones that have been taken from our fields and pastures with the grain and roots and the little return that has been made, I have been ready to exclaim, our soil was *rich*, and is rich still! Man, by his short-sightedness and ignorance cannot exhaust it so that nature and judicious cultivation cannot restore it to its primitive fertility.

My motto is, that each farm and each *acre* has the material within itself, with the aid of air, rain, and sunshine, and man's labor judiciously laid out, to produce, in a few years, fair and paying crops, and to continue such production for an indefinite period.

When man is willing to become the student of nature, and to be governed by nature's sure and perfect laws, then agriculture will flourish. We see that an exhausted field or pasture, if let alone, will quickly set with the young saplings, which soon spread out their branches, and shade and protect the soil. The leaves fall and decay, the earth becomes mellow, the leaves yearly absorb from the atmosphere, and their fertilizing materials are deposited in the soil; while the roots, by their extension, break up and pulverize the earth to a good depth. After ten years, examine this soil. It is not the hard, thin earth that it was ten years before, but is a mellow, rich mould. Let these trees grow ten years more, and then remove and cultivate the soil as we should, and we shall hear no more of an exhausted soil, and unprofitable crops. H.

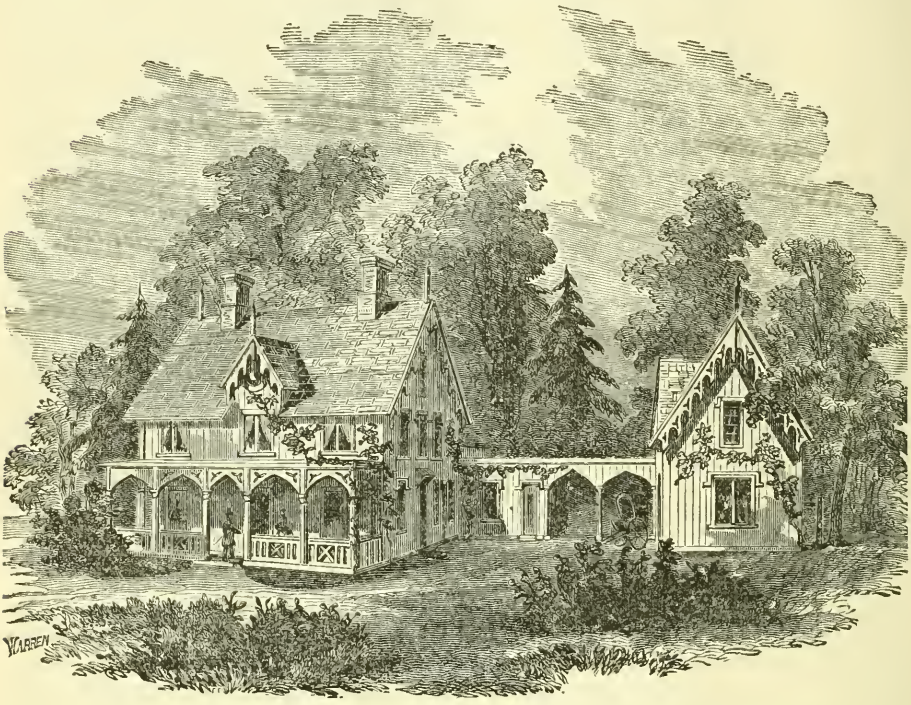
Epping, N. H., 1867.

GRAINS.—According to the analysis of Cinhof of the different quantities of nutritious and succulent properties—starch, gluten and mucilaginous sugar in the various kinds of grain—the following appears to be the relative proportions:—

In Wheat, per centum,	78
" Rye,	70
" Barley, as to quantity and species,	65 to 70
" Oats,	58
" Peas,	75½
" Beans, (French,)	85
" Windsor Beans,	68½
" Horse Beans,	73

PLACENTA—RETENTION.—Sometimes cows cause trouble to their owners, occasionally loss also, by the retention of the placenta after calving. It was the custom among Yankee farmers in old times, and is now among dairymen in Herkimer Co., as we learn from Mr. Willard, through the Utica *Herald*, to feed cows a mash of bran and water as warm as they will take it, as a means of removing the obstruction. This usually proves effective without aid from anything else. Another cure is mentioned, consisting of sharp cider vinegar, heated nearly to the boiling point, and poured upon the bran and fed warm to the cow.

—A correspondent of the *Country Gentleman* says that he has had several twin calves of opposite sexes, and he has known of several born to other breeders, and that he knows of no instances where the heifers bred or where the bull failed to be a good breeder.



COMPLETE FARM HOUSE AND STABLE.

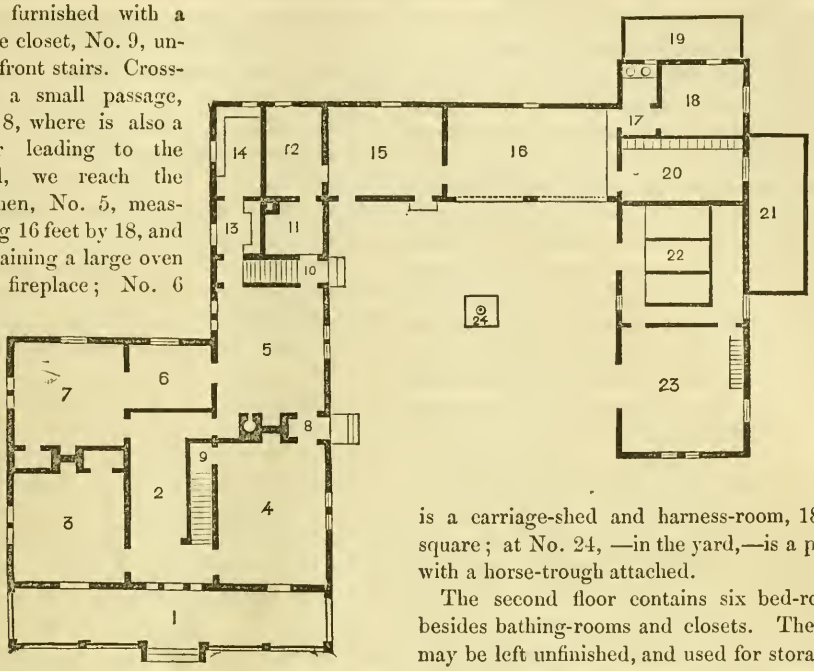
In connection with the remarks in another column, of our correspondent "K. O." upon the subject of the proper construction of farm houses, and especially as illustrative of what he says of the economy and conveniences of the square form, we present the accompanying plans, designed by Geo. E. Harney, and engraved for the New England Farmer. The connection of the house with the barns and other outbuildings is not at all essential to the plan of the house; neither are the porch or dormer-window. We prefer a plain roof, and believe that the garret should be used as a sleeping room only from absolute necessity, especially during our hot summer seasons.

The following explanations of the plan are furnished by the artist:—

No. 1, the veranda, is 8 feet wide, and extends across the whole front of the house; it opens into the main hall, No. 2, which is 11 feet wide and 24 feet long; No. 3 is the parlor, 16 feet square; No. 4, living room, 16 feet by is a large store-room, 8 feet by 9, opening directly into the kitchen; No. 7 is a bedroom, 15 feet by 16. At No. 10 is another entry, 3 feet wide, leading to the yard; here are also stairs to the chambors and cellar; No. 11 is a scullery or wash-room, 8 feet square, with a chimney in the corner; No. 12 is a tool-room and shop, 8 feet by 13; No. 13 is a pantry, fitted up with sink and shelves; No. 14 is a dairy, 6 feet by 13. From the work-shop a door opens into the wood-house, No. 15; this is 13 feet by 16, and connects with the open carriage-shed, No. 16, 13 feet by 24.

The barn is planned as follows: No. 17, passage leading to the privy and to the covered portion of the pig-sty, No. 18. No. 19 is the yard connected; No. 20 is a hen-coop, 9 feet by 18, fitted up with a couple of rows of nests, and opening upon the hen and stable manure yard, No. 21; No. 22 contains stalls for three horses, with feeding troughs in front; No. 23

20, furnished with a large closet, No. 9, under front stairs. Crossing a small passage, No. 8, where is also a door leading to the yard, we reach the kitchen, No. 5, measuring 16 feet by 18, and containing a large oven and fireplace; No. 6



is a carriage-shed and harness-room, 18 feet square; at No. 24, —in the yard,—is a pump, with a horse-trough attached.

The second floor contains six bed-rooms, besides bathing-rooms and closets. The attic may be left unfinished, and used for storage.

IMPORTANCE OF MANURE.

Manure is the farmer's gold mine—the true source of the cultivator's wealth. Every one, therefore, who is engaged in agricultural pursuits should tax his wits and his energies to the utmost to secure a sufficiency of the article, and to apply it in such a manner as to secure the best and most affluent results.

The stock kept on the farm will, of course, produce the usual quantity every season; but the supply from this source is often wholly inadequate to the demands; and they who rely exclusively upon it, will often fail in consequence of not having enough to render their business profitable, even with the greatest exertions they can put forth.

When a regular manure shed or barn cellar does not constitute a portion of the fixtures of the farm establishment, the business of forming or compounding manure may often be economically prosecuted in the barn, or even in the yard. The latter should be located on level ground, and have a solid bottom to prevent the escape of the urinous and rich carbonaceous matter from escaping or soaking into the soil.

As no part of the actual food of vegetables is insoluble, a considerable portion of the richest constituents of manure—whether animal or vegetable—is too often lost by allowing it to be leached and run off into the highway, or, as we have many times seen it, into brooks or rivers; or by excessive evaporation or sinking into soil where it is not needed.

If the yard be on a sandy foundation, the centre of the enclosure should be scooped out so as to present a central depression of at least two feet, in a yard of fifty feet in diameter, and the entire surface covered with clay, in which a sufficiency of coarse, sharp gravel,—free of loam or vegetable matter of any kind,—has been mixed to bring it to the consistency of firm, hard mortar. A covering of three or four inches in depth, well worked and firmly compacted by ramming, will, if suffered to dry properly, last for many years, and prove an effectual barrier against the loss of the fertilizing liquids by infiltration; while the elevated edges of the yard will prove equally efficient in preventing loss by washing.

Into a yard so constructed, all the materials ordinarily used in composting may be conveyed as convenience allows, and when mixed with the liquid and solid voidings of the ani-

mals, will, in a short time, and without oppressive care or labor, become valuable manure. Good muck should be the chief ingredient,—then old straw, haulm of every description, refuse hay and fodder, leaves from the forest, loam and sods from the road side and ditches, weeds from the fields and garden, ferns from the runs in pastures, scraps of leather, apple pomace, the refuse of the comb, or almost any other factory, old woolen rags, soot, charcoal dust, the wash from the sink and laundry, old feathers, bristles, spent tan, saw dust, are all valuable ingredients in the compost heap, and if mixed with some alkalescent substance, such as lime or unleached ashes, will be speedily resolved into an efficient aliment of vegetable life.

Upon this mass, the slops and dish water made about the house, as well as the other liquids, should be conveyed, and the whole thoroughly mixed by plowing or shovelling over, as often as once a month. Even large shrubs will decompose, if care be taken to keep up a due degree of fermenting energy in the mass. Rich loam from those low places that may be seen by the side of every highway, which are constantly catching the wash from the road, is a good ingredient, as it possesses in an eminent degree, the power of absorbing the rich juices which emanate from the other materials; but care should be had not to let it preponderate too largely over the putrescent constituents, as in that case it would produce more harm than good.

Copperas water sprinkled weekly over the surface, with a few bushels of gypsum and salt will be very beneficial.

Where such a process as this is constantly going on, the farmer is never at a loss what to do with the *waste matter* that is accumulating day by day on every farm. There is the place for the potato, pumpkin and squash vines, the pea and bean haulm at harvest time, and the rubbish that is collected from the garden and fields in the spring. An incidental good is also secured in the neater appearance about the buildings, by picking up the bones, bits of leather, and whatever gives the surroundings of the buildings a careless and slovenly appearance.

A yard, such as we have described, regularly filled and cared for, will be worth more to the farmer, than one thousand dollars at interest.

CHARCOAL, AND THE VOLATILE FOOD OF PLANTS.

When vegetables decay, upon the cessation of the vital principle, no inconsiderable portion of their fertilizing particles is set free in the form of gases. These are of the first importance in vegetable development and maturation, and their loss is an actual diminution of the value of the manurial mass.

Carbon is one of the elements of vegetable nutrition to which we attach great importance, being indispensably necessary to the perfection of the vegetable system, and without which no plant can be perfected. It is of little importance whether this element is applied in the form of solid carbon, as in the case of coal produced by charring wood, or by the slower decay of plants when subjected, after their demise, to the play of chemical affinities—the substance is essentially the same in both cases, as far as practical value is involved, and in both, gives rise to precisely the same results.

The power of charcoal—the most tangible form in which carbon exists—to absorb the gases produced by putrefaction, is well known to be great; hence, as an economizing agent, its use in agriculture cannot be too frequently urged. De Saussure ascertained, by actual experiment, that charcoal (formed of box wood) absorbed, in twenty-four hours, and retained within its structure, the following volumes of gases:—

Hydrogen,	1.75 volume.
Nitrogen,	7.05 "
Oxygen,	9.25 "
Carbonic acid,	9.42 "
Olefiant gas,	35. "
Carbonic acid gas,	35. "
Nitrous oxide,	40. "
Sulphuretted hydrogen,	55. "
Sulphurous acid,	65. "
Muriatic acid,	85. "
Ammoniacal gas,	90. "

Charred peat is also a very excellent application for this purpose. It has been found to possess the following chemical composition:—

	Combustible.	
Carbon,	79.24	
Hydrogen,	2.20	
Nitrogen,	.54	
Oxygen,	6.44,	88.42
	Incombustible.	
Clay and silica,	2.48	
Oxide of iron,	1.66	
Phosphoric acid,	.34	
Silicate of potash,	.98	
Chloride of sodium,	2 53	
Carbonate of lime,	1.85	
Sulphate of lime,	1.44	
Loss,	.30	11.58
		100.00

The gaseous compounds of phosphorus are amenable to the same general law, being ex-

tremely volatile, and exhibiting a strong tendency to escape into the atmosphere unless arrested by some substance capable of absorbing and fixing it.

RENTING FARMS.

The idea of going to the poor-house is scarcely more repulsive to young American farmers than that of cultivating a hired farm. While we respect the ambition that prompts the desire to become a land owner, we believe that young men and even those more advanced in life are frequently placed in circumstances which make it advisable to hire for a few years. at least, instead of purchasing at once. We have recently published some suggestive articles on this subject. A friend and relative of ours, who now owns many broad acres and pays a round income tax, commenced life on leased land in an old town in New England. We allude to this subject at this time, however, from having noticed a statement made to the New York Farmers' Club by J. T. Donavan of Otranto, Iowa. He writes that for three years the State has levied taxes on his homestead to the amount of $70. He was short of means when he began, and has been able to put only seventeen acres in cultivation. For this sum he says he might have rented as much or more improved land, and estimates that he might have lived more comfortably and made more money by doing so.

THE MANGE

Is a cutaneous disease, and contagious. If in a large herd, a single animal is attacked, it is seldom that any escape. The diseased cattle should be removed to some distant stable at once, where there can be no possible communication with the others.

The symptoms are a dry dandruf or scurf about the roots of the hair, attended with severe itching and inflammation, inducing a violent rubbing. It is first seen about the tail, and thence spreads in every direction.

The causes are various. Over-feeding, or under-feeding will produce it. A sudden change from the lowest diet to the richest will bring it on in its worst form. Filthy stables, and want of cleanliness about the animals themselves will produce it,—but not so readily as improper feeding. The treatment to effect a cure is simple. Prepare an ointment of three gills of spirits of turpentine, three-fourths of a pound of flour of sulphur, and oil enough to reduce the whole to a thin plastic unguent. Rub this in gently, but thoroughly, with the hand or a soft brush—the hand is best, and there is no danger in doing it. Whale oil is disagreeable to use on account of its smell, and linseed oil is of too drying a nature. The best oil, perhaps, would be new butter, before being salted; this would be sweet, soft and penetrating. This mixture may be kept in a tight vessel for years, and would prove an excellent remedy for the "mange," as well as for several other cutaneous and contagious diseases to which cattle are subject.

THE GOLDEN GRAIN.

The grain! the grain! the beautiful grain!
How it laughs to the breeze with a glad refrain,
Blessing the famishing earth in her pain,
Making her smile with glee;

Lifting in praise each bright golden crown,
As it drinks the dew that the Father sends down,
Courting the sun's warm lover-like frown,
Returning it smilingly.

The grain! the grain! the beautiful sheaves!
A song of joy their rustling weaves,
For the gracious gift that the earth receives,
Given most royally.

From every hill side, every plain
Comes the farmer's song as he reaps the grain;
And the summer breeze wafts on the strain,
In wildest harmony;

A grateful song of rejoicing to greet
The Master, who sendeth the seasons sweet,
Giving the grain, the golden wheat,
A blessing for all to be.

He pours o'er the earth his brimming horn,
That the valleys may laugh and sing with corn,
While hope, with her death trance, rises new born,
The brighter days to see.

Our Father, we thank Thee! the beautiful grain,
Brings a blessing like that, when the soft summer rain
Comes down on the parched earth, nor bids it in vain,
Rejoice and hope ever in Thee.

Hope ever, and trust! Thy thoughts, not like ours;
Thou sendest the drought, then bringest the flowers,
Withholdeth the grain, then, with magical showers,
A glorious harvest we see.

And so for the grain! the beautiful grain!
The golden, the laughing, with glad refrain,
Blessing the famishing earth, in her pain,—
We offer our worship to Thee.

—Mrs. T. F., in Rome, Geo , Courier.

Welding Iron.—M. Lietar, of Brussels, has described a new method of welding iron or steel, or iron with steel. He calcines and reduces to a fine powder, 1 kilogramme of iron or steel fillings, 100 grammes of sal ammoniac, 60 grammes of borax, and 50 grammes of balsam of copaiva. One of the pieces of iron or steel to be soldered is brought to a red heat, and after being cleaned with a wire brush, the powder is spread upon it, and the other piece of metal, at a white heat, is brought in contact with it; thus a perfect welding is effected.

BOCCONIA.

This is a greenhouse plant which is cultivated for its beautiful foliage. It is used for the decorations of beds and lawns in summer, but must be housed in winter. It can be had of Washburn & Co., Boston, and of other dealers in flowers, &c. The variety shown in our engraving is that known as *Bocconia frutescens.*

LETTER FROM THE FARM.

Concord, June 13, 1867.

Gents:—I have just returned from a very pleasant visit into Worcester county. Last August, business called me to the town of *Barre* and some of the neighboring towns, and I then improved the opportunity to visit several farms, look carefully at their stock, and observe modes of husbandry. I was then so much pleased with what I heard and saw, that I suggested to several of the farmers of this town that it might be profitable to them, and especially to those raising milk for market, to go and see the dairy stock of that portion of Worcester county.

In accordance with this suggestion, some dozen of them turned out their teams, and at 7 A. M., Monday, June 10, the "cavalcade" was on its way. Passing through a portion of Acton, Stow, Bolton, Lancaster, and Sterling, the party paused at Princeton five hours for dinner, and for opportunity to look at the farm of John Brooks, Esq., of that town. Mr. B. was busily employed in one of his orchards, *pruning*, and in reply to a question, stated that about the *middle of June*, was the most appropriate season for that operation. A long experience convinces me that he is right. He very kindly left his interesting work and accompanied us over his large, and fine farm, nearly every portion of which, buildings, fences, fields and stock, were carefully observed. Numerous questions were answered with a clearness and affability that gave the interview a charm, while the replies were instructive or suggestive, on very many points. Some of his grass fields were already covered with a crop that surprised every beholder; indeed, it did not seem to me, that such a crop could stand until in blossom without injury to its quality. The grass seemed to stand as close together as the fur on the back of a fox! The question occurred, whether the dampness near the ground would not be so great as to rot the lower portions of the leaves, and thus create a mould which would affect the whole crop? But Mr. B. will undoubtedly have an eye to that. The stock in his pastures were literally "up to their eyes in white clover,"—were actually feeding upon fragrant flowers and wild honey. I doubt whether that oft-quoted strip between the Tigris and the Euphrates could boast of more than this. He has a meadow in process of reclamation, first by drainage, and then by surface working, which afforded us an excellent example of what fine grass fields can be made from our low and cold lands,

that are usually covered with brakes, bushes and unprofitable water grasses.

A portion of Mr. B.'s men were preparing the ground for a crop of carrots. It had probably been plowed once or twice before, this spring. The team plowed several furrows, which the men would immediately follow and rake, leaving it in condition for the seed-sower without further labor,—so that when the plot is finished, it is smooth, and not a foot-print upon it.

The farm is a very stony one, and has probably required more cost to remove them out of the way than it has cost, aside from that, to reclaim all the land now under cultivation. To remove them so effectually as has been done from the broad, clean fields which we saw, must have been a work requiring long and persistent effort, and attended with great cost.

When the rocky farms of New England were entered upon some generations ago, the question undoubtedly arose every day—"*what shall we do with these stones?*" and the thousands of acres which are now cramped and divided by them, show the answer to have been, "*We will put them up into walls.*" And they did put them into walls, in some instances dividing the fields into lots of *one* acre, up to three, four, and rarely more than five. This was an expensive job to begin with, and has made the cultivation of the fields inconvenient and expensive ever since. In some neighborhoods, a vigorous reform has been commenced in this respect, and I noticed splendid fields of ten to twenty acres now, which were formerly encumbered with a labyrinth of cross-walls.

In the instance before me, as in many others, Mr. Brooks succeeded his honored father, upon an estate where the work of reclamation had been greatly advanced under the old system, and where it will require half as much labor to remove obstructions to improved modes of husbandry, as it did to erect them. But I think he has commenced that work, as I noticed upon his farm, and upon others near him, large and beautiful fields without any appearances that they were once ancient fortifications.

It seems to me a waste of human energy and skill, to enter upon the hard and rocky soils of New England, to work them out into profitable farms, and fit them for the homes of a people so far advanced in civilization and the refinements of life. Such a course leaves little or no time for the cultivation of the intellect and affections. It becomes a life "*under* the harrow." It is a stubborn effort to overcome the still more stubborn obstacles of nature. Let such lands be covered with forests, and when they are required, let a portion of the soil which they occupied be burnt over, cropped once with rye, laid to pasture for a series of years, and then return again to forest.

But if some young men, with unconquerable will, and with muscular power which seems to them equal to a forty-horse-power steam engine, will enter upon such lands, I advise them to build no more stone walls than are absolutely necessary to confine their stock within the limits of their pastures; no others, not even on the road-side. Let the laws protect them there. Let them begin on the land nearest to the buildings, tear up the surface and place a foot below it all the stones that can be crowded together. If there are large ones, too large for the team, split or blast them, and then plunge them into some valley of Hinnom, or cover some bald ledge with them that mars the beauty of the landscape, where they may remain undisturbed through all periods of time. An acre of land treated in this way, will feel the effects of such a trenching for half a century, and will probably yield *more actual profit* to the proprietor, than any other *five* acres on the farm, treated as rocky land usually is.

It costs something to travel over and around fifty large rocks ten or a dozen times annually, to say nothing of the tools and machines smashed to pieces against them, and the laming of teams, which not unfrequently takes place.

Thanks to Mr. Beman, the landlord at Princeton—besides the cash left with him—for making his house a *real home* to us when he took us in, somewhat tired and hungry.

The early evening ride over the hills from Princeton to Barre was delicious, and afforded fine opportunities to observe the condition of farming, from the elevated positions which were frequently passed over. The world had on its holiday attire. We were exhilarated by the cool, refreshing breeze, and freedom in the open air. The brooks sang, as well as the birds, as they coursed their way down the hill-sides, or leaped in miniature falls from

rock to rock. The inspiration of the Psalmist did not seem extravagant to us, when he said, "the little hills rejoice on every side. The pastures are clothed with flocks; and the valleys are covered over with corn; they *shout for joy, they also sing.*" So did we; and our steeds seemed to catch the spirit, too, and bore us gaily along, as though they were the winged Mercurys of old.

One of the party, now a farmer, but long accustomed to the harrassing responsibilities of public office, which he discharged with signal promptness and ability, exclaimed, "Isn't this *real* enjoyment! There is nothing fictitious about it. The cares of the past and the duties of the future shall not cast a shadow upon *to-day.* This is *real enjoyment!*—this flush of health, these forest or grass-covered hills, fertile valleys, running brooks, singing birds and rampant horses! *Now,*—as we wind through this sweeping valley, with the bending alders over our heads,—this is enjoyment, pure, rational, and entering into the very soul, to become there a permanent fountain of pleasing and grateful recollection." So we had our little episodes of *criticism* upon the works of the craft, or a flourish of rhetoric, or a tall brag of what certain steeds in the party could do when put to their mettle. It *was* enjoyment, and would have been almost without alloy, had our sometimes boisterous mirth been attempered and graced by the presence of some of the gentler sex.

Many of the excellent farmers of Barre, together with some gentlemen of other professions, met us at the Hotel in the evening, where many mooted points in agriculture were pleasantly discussed, and many acquaintances formed which I trust will be continued for years.

The first visit of Tuesday morning was at the *cheese factory,* situated quite near the centre of the village. About 14,000 pounds of milk were received that morning, the result of which, the next morning, would be about 1,400 pounds of cheese. We were too early to witness many of the steps required in the process of making, but as you have occasionally referred to them in the Farmer they are unnecessary here.

The next call was to examine Mr. Bullard's *Hay Tedder,* and two or three *horse rakes* of different patterns; one of which he stated he raked eighty acres with, last summer, with rapidity and correctness. His *Tedder* is well known among progressive farmers, and ought to be very generally introduced. Where fifty tons of hay are cut upon a farm, I think the use of it would pay its cost in a very few years. I am inclined to think it would in *two* years.

The party then passed along to look at one of the *Improved Buckeye Mowing Machines,* manufactured by A. B. Barnard & Co., of West Fitchburg. It was examined with critical care, and was pronounced to have superior merits, and probably to stand at the head of all contrivances for mowing, by those who had seen it used, but who had purchased other machines before they were aware of the superior excellence of the Buckeye. At the same place, a new pattern of what was known last year as the *Bay State Horse Rake,* was shown us by the inventor, Mr. S. R. Nye, who resides in Barre. This was also examined with great care, and much confidence was expressed in its becoming an important labor-saving machine—one of scarcely less value than the mower itself.

The party, attended by several of the Barre farmers, then called at the farm of D. B. Derry. They saw only a portion of his stock, which was excellent, and did not go over his farm.

On the farm of A. H. Holland were found seventeen cows, which as a herd, were excellent; the breed of nearly all we saw being grade Durhams. He is introducing the Ayrshire blood, and had a very fine bull of that breed, one of Mr. Peters' stock. Mr. H. thinks a cow that will dress 700 lbs., when in good flesh, is the right size for the dairy. A portion of his pasture was thinly covered with brush, such as apple tree trimmings, and waste bushes from under walls, &c. He stated that it was worth far more, spread in that way, than the ashes would be if the brush were burnt; that it partially *shaded* the ground; that the feed about it was more abundant, and that it did not obstruct the cattle in feeding. Both theory and practice were new to us.

Mr. Wm. R. Barrett had twenty-seven cows, all beyond an ordinary quality, and some of them of great beauty and excellence. They ought to be productive on such pasture as they were grazing. We found them at 12 o'clock,

in a park of lofty trees, where there was little or no underbrush, lying down and quietly chewing the cud of contentment on the green sward beneath them.

From this farm we passed to what I believe is called the *South Cheese Factory*, where we saw some parts of the process of cheese-making that we could not see in our morning visit. The curd was now ready to go to the presses, and its quality was liberally tested by most of the party. It certainly was inviting both in taste and smell. As in the other, every thing here was the perfection of neatness and order.

Thence to the house of Mr. J. T. Ellsworth, where some fifteen to twenty sat down to an excellent dinner, and proved that they were as accomplished as *trencher-men* as they were in any other duties of the farm. After the heroic exercises had been gone through with at the table, including a glass of pure, home-made wine, Mr. E. showed us his stock of dairy cows, some thirty in all. As a whole, they were superior to any herd we had seen. Some of them were beyond criticism in symmetry. One of the party pointed out a two-year old heifer, and offered $100 for her, and to incur the cost of getting her home. The same sum was offered for another of the same age, a half blood Jersey, but he declined both. He had recently received nearly $500 for a pair of beef cattle, and the cow alluded to in my letter last summer, dressed nearly 1,300 pounds! His barn is 132 feet by 46; and is annually filled with hay and grain from about forty acres of land, which is all he has under cultivation. His buildings, fences, roads, &c., are in excellent condition. His whole stock amounts to about fifty head.

Mr. Ellsworth has great faith in the land; thinks it a good place for the investment of capital, and finds a reasonable profit from it. Believes in progress, in entertaining visitors and going a visiting; in purchasing the best stock, even at high prices, and in the application of science to the operations of the farm. The only evidence of sticking to old notions I discovered about his place, was a decrepit Manny Mowing machine, which I suppose he preserved on the principle of speaking well of a bridge that carries us safely over,—that is, he has never got killed on it, and, therefore, it is a very good machine. Mr. E. is evenly yoked to a charming person who presides in the house, and who takes an intelligent interest in all the affairs of the farm; who once assisted her dairy-maids in making one or two hundred pounds of cheese each day, but who finds great relief and comfort now in seeing the milk started off for the cheese-factory. Under this easy-going system of order and harmony, farm life is relieved from many of the almost intolerable burdens which once oppressed and shortened the lives of so many women. "Worcester county cheese," said Mr. Ellsworth to me, "has sent more Worcester county women to untimely graves, than all other causes combined!"

The next and last call was at the farm of Mr. S. E. Bates, and we had time to look only at his herd of cows, which was worthy the highest praise. Two or three of them surpassed in form and product any we had seen. He had recently paid $221 for a two-year old heifer, a short-horn grade. One of the older cows gave 63½ pounds of milk per day, for ten consecutive days. He has thirty-one cows.

At dinner, and during a portion of the time of our perambulations, we had the company of J. H. Goddard, Esq., the editor of the Barre *Gazette*, who, though speaking through type and quill, is decidedly interested in progressive farming, and informs his readers of advances in the art, and frequently places before them suggestions for still greater improvements.

At 5 P. M., we took leave of Barre, sensibly impressed with the beauty and fertility of the town, and with the cordial attentions of its intelligent and agreeable people.

Ambling along at a pleasant pace, the party reached the *Wachusett Mountain House*, in Princeton, at 7, now rounded and perfected by the presence of Barre friends with their *ladies*. Late as it was, one of our number scaled the mountain and returned before 9, laden with wild flowers. In the neat and commodious parlor of the house, various topics were discussed, anecdotes related, music attempted by some of the gentlemen, but with exceedingly poor results. The evening waned into night, and night into morning, before the party became prone and quiet.

At 9, on Wednesday, the whole party ascended the mountain and had a fine view of the surrounding country. Having descended, the *Barreans* departed to their pleasant town, and

our party to Fitchburg, where we dined. A pleasant ride of thirty miles after dinner, brought us to our respective homes, grateful for the opportunity of seeing more of the country at this beautiful season, of learning valuable facts relating to our business of life, and forming an acquaintance with enterprising and intelligent people. Truly yours,

SIMON BROWN.

MESSRS. R. P. EATON & Co.

DIFFERENT FLAVORS IN CHEESE.

Two or three years ago, while acting as one of the committee on agricultural matters at the Mechanics' Fair, in Boston, we were called upon to examine several parcels of cheese, and to award premiums to those which were considered the best.

All the samples presented were as near perfection, *to the eye*, as possible. Nothing could be suggested by any member of the committee, that would make them more attractive in appearance. They were all excellent in form, color and density, and they appeared as if the art of the manufacturer had been exhausted in producing them.

When, however, the several cheeses were probed and *tasted*, it was clear that they were alike only in their outward appearance. Some of them were mild, and had that exquisite cheesy sweetness which recommends them to all, while others had a sharp, almost rancid flavor, which made the tongue and mouth smart upon tasting them.

The "statements" presented by the contributors were carefully examined and compared by the committee, and were found to give the *manner of making* the different lots of cheese so much alike that they came to the conclusion that the cause of difference must be imputed,

1. To the amount and manner of using the rennet employed, or,

2. To the qualities of grass on different farms.

They were not satisfied, however, that either of these was the cause of the great difference which they found existing in the cheese before them; and they separated without coming to any conclusion as to the cause.

It was the practice among dairy-women—many years ago, perhaps it is now,—to put *about a table spoonful of salt, to each gallon of the evening's milk*. This was sprinkled on the bottom of the pan, the milk strained upon it, and it then stood until morning, when it was mingled with the morning's milk.

It was found that this practice enabled dairy-women to produce finely-flavored cheese on farms that had been pronounced totally unfit for dairy purposes.

The effects attributed to the salt, were,

Preventing the milk from souring, in the hottest nights,—and

Encouraging coagulation, and promoting the separation of the curd from the whey.

If the practice has not been adopted by cheese-makers, would it not be well to make the experiment?

NEW PUBLICATIONS.

THE FARMER'S ACCOUNTANT, a Comprehensive and Systematic Application of Accounts, adapted to the wants of the Practical Farmer. By C. O. and F. Perkins, Chester, Mass.

This is a blank book, or rather three blank books bound together, each one neatly ruled, with printed headings, and intended for a year, with blank plan for farm, farming inventory, cash, farm, family and incidental accounts, expenses, stock and crop accounts, blank agreement with hired help, experiments, improvements, &c., &c. Mr. F. Perkins informs us that his father, who is a practical farmer, has always kept a close account of all his farm and business transactions, and that the present work is the result of his own and of his father's experience in practical farm book-keeping, and not the mere fancy sketch of a retired merchant. With this book the farmer has little more to do than to fill up the blanks, which are so neatly arranged as to make the clumsiest fingers itch to be using the pen.

From our own observation and experience upon the farm, we do not regard book-keeping, as essential to pecuniary success. A particular course, or a particular crop, may succeed this year, and fail the next, on the same soil, with or without a debt and credit account. Farmers are subject to droughts and floods, to the ravages of insects and disease, which cannot be counteracted or explained by the most carefully kept balance sheet. Still, we believe that every farmer should practice some system of book-keeping, and make some record of events upon the farm, in the family and neighborhood.

Students and professional men often injure their bodily health by excessive devotion to head work; and farmers, in like manner, are liable to neglect the proper exercise of their mental faculties in consequence of severe bodily labor. To guard against this tendency of his occupation, we would recommend book-keeping to every hard working farmer. He should *take* time to write, to add and subtract, to "keep his hand in," if for no other purpose. By doing so, both himself and his boys

will take an interest in their business, and form an attachment to the farm, which they might not do, if no account were kept with the several fields, crops and animals which they cultivate or produce.

For the New England Farmer.

NOXIOUS ANIMALS, INCLUDING INSECTS.---NO. VII.

Plant Lice. --- Continued.

Another anomaly of the *Aphidians* is, that they are both oviparous and viviparous. The perfect winged insects appear in the spring or early summer, and again in autumn; the females, sometimes wingless, then laying eggs, from which is hatched a generation of wingless lice, apparently of one sex only, and generally called females, which are viviparous without the interposition of males, bringing forth a numerous progeny like themselves, which in turn bring forth another like progeny, and so on, to the seventh or eighth generation before the winged males and egg-laying females again appear.

In regard to this singular manner of reproduction, Prof. Walsh, of the *Practical Entomologist*, says: "How under these circumstances the process of generation is accomplished, is a curious, and at present, an unsettled problem. Some distinguished German Entomologists maintain that these so called females are neuter (*Ammen*,) without any regular ovaries developed, and that it is by a sort of budding process, analogous to that of the Polyps, that the young plant lice are developed within the parent stock. I have just heard from Mr. Darwin that it has been demonstrated by Balbiani, in a paper recently published, that these individuals at first are neither females nor neuter, but hermaphrodites. If this be so, it is the only known instance of an animal, so high in the scale of creation as an insect, being of the hermaphrodite sex."

In the zoology of Agassiz and Gould another theory is noticed,—that the so-called intermediate females are not parents, by budding or otherwise, but nurses, preserving in their own bodies, and committing to the bodies of their successors the offspring of their ancestors.

The well known fecundity of plant lice has been the basis of some curious calculations in regard to their possible increase in a given time, and under favorable circumstances. Fortunately for us, such circumstances do not often concur, so as to make their theoretical increase practical; yet their actual increase is sometimes astonishing. The year 1861 must have been highly favorable to the oat louse—before described as of a reddish brown color, called also the grain louse, because it is found on wheat, rye, oats, barley and to some extent on Indian corn. In that year they appeared in multitudes which no man could number, simultaneously throughout New England and some of the Middle States, damaging more especially late spring grain. Just before an acre of wheat, belonging to the writer, began to ripen in that year, it was estimated from a careful examination and several countings, that the number of plant lice infesting that crop was equal at least to one-half of the number of grains of wheat. The product of the acre was eighteen bushels, and allowing seven hundred and sixty-eight thousand grains to the bushel, there were nearly seven million of lice. Yet this large number is not one-eight-hundredth part of the possible theoretical number of the fifth generation from a single progenitor, according to Reaumur. Or, in other words, a single female *Aphis*, on this theory, might be the parent of a fifth generation sufficiently numerous to stock more than eight hundred acres, with one louse to every two grains of wheat. And as this species matures very rapidly, and the generations succeed each other at short intervals, all this vast increase might take place in a few weeks. Practically no such increase ever takes place, yet the progenitors of the myriads of lice that infested the grain of 1861 were so few that neither they nor their offspring were generally noticed until after the heading of the grain.

Among these grain lice no winged or perfect insects were discovered, although such are always found on the apple tree in the early part of the season. This absence of the perfect insect I supposed to be due to the time of observation—it being too late for the winged lice of spring, and too early for the winged lice of autumn. But it is stated in the January number of the *Practical Entomologist* that Dr. Fitch, who carefully watched this *Aphis* the year round, failed to find any eggs, or egg-laying lice. So that this species not only excels in fecundity, but is even more mysterious than other species in its manner of reproduction. It was also noticeable that these lice were not attended by their usual friend, the ant. The reason for this non-appearance, I now learn from the same authority, is that this species excretes no sugar or sugary fluid.

The vast number of grain lice in 1861, and their paucity in previous and succeeding years, cannot be accounted for on any theory of the presence or absence of parasitic insects, or any other theory that has as yet been suggested.

Being curious to know what would become of this host of little animals when the grain reached maturity, I closely watched them from day to day, and brought several stalks into the house, from which stalks, as soon as dry, every louse dropped and perished, without making any provision for a future race; and apparently, so did it happen in the field; for when the grain matured not a louse or egg could be found.

Mysterious creatures—they came—they perished, and left no record from which to unfold the secret of their mission. They did not seem to be sent, like the locust or army worm, as a rebuke for man's transgressions, nor like quails to rebellious Israel, to be food for

Reaumur's hungry parasites, for they were not there to eat them. Like many individuals of the human race, unless we take into the account their own enjoyment of life, they seem to our imperfect mental vision to have been made in vain. I. B. Hartwell.

Wilkinsonville, Mass., 1867.

For the New England Farmer.

TALK WITH AN ILLINOIS FARMER.

Potatoes.—I think you use too much seed. I find two eyes better than more. I cut my potatoes into small pieces generally containing one eye; I put two in the hill. After they are cut, let them lay and dry a week or more before planting. The cut surface will become dry and the moisture from the pieces will not be absorbed by the soil, but will go to nourish the shoots. When the potatoes begin to show themselves in the rows, take one horse and a small plow, and throw the soil on one side on to the row, then come back on the other side doing the same, and cover the young shoots from one to two inches deep. They will grow up through the soil strong and stocky. Then go through the rows the other way, throwing up the soil in the same way. If there should be need, go through the row with a horse hoe or cultivator. We never use a hand hoe in field culture of potatoes.

Corn.—With the machinery we now have, I can cultivate eighty acres as easily as I could fifteen acres when I went there, thirty years ago. With four good horses and a gang plow, which turns two furrows at one time, I mount my seat and go around an eighty acre lot. A skilful hand will drive the team, and manage the levers that throw out or in the plows. If the land is full of roots, it is best to have one man to guide the team and one to work the plows. Such a team will plow from four to five acres a day. This is as much as two teams with two men and single plows, will do, thus saving the labor of one man; and then, having rode all day instead of walking behind the plow, I am not used up, but can take care of my team and do my chores, and am ready for the work to-morrow. Thus with about sixteen days of good weather, I have my lot plowed. Then if I wish to make a nice job of it, I take two harrows and set them abreast, and three and sometimes four horses abreast, and harrow ten or twelve acres a day. This takes six or seven days. The next machine is the gopher. This is a plank a foot wide, with three pieces of wood like sled-runners, four feet apart, attached to one edge, and a pole to the other. This pole goes between a pair of horses. With this machine I mark out the rows one way as straight as possible; then I take the corn planter, fill the hopper, take on a bag of seed corn for ballast, hitch on a pair of horses, and take one man to drive and one to work the planter, and we can plant ten or twelve acres a day. The marking and planting will occupy about twelve days. Then my eighty acre lot is planted. This, taking out the Sundays and rainy days, will take about six weeks; so if a man has but one four horse team, he must begin in season—and it is easy to see how rainy weather and long storms put us back in cultivating large fields. When the corn begins to show itself, I take my harrow and a pair of horses, and harrow the field again. It does not injure the corn, and is the best way of keeping down the weeds. The work after this is done with the plow or cultivator. When the corn is ripe, we take a wagon and pair of horses, and go through the field, taking five rows at a time, and pick the ears; then with another machine we cut the stalks and throw them into rows, ready to be burned. Thus the whole work of cultivation is done by machinery.

Follow the corn with spring wheat, and sow a part, or the whole field with clover and feed it off in the fall. Cattle will thrive on this till December. The next year you may cut a large crop of clover, and when you plow it, the clover roots will be equal to a dressing of manure.

Rye.—I raise more rye than formerly. I think there is more raised in the State. Have raised four hundred bushels in a year. I have two reasons for it: First, it makes good pasture in the late fall and winter. Sow it early and let it get a good start, and it makes fine pasture. I sow three pecks to the acre. Second, grass seed is more sure to catch well with rye than with any other grain. We sow two bushels of wheat and three of oats, and they are apt to smother the grass, but with three pecks of rye the blades come up so far apart that the grass has a chance to get rooted, so that when the rye tillers out, it will not kill it. When it is ripe, a sufficient quantity of the grain will shell out, to bring up quite a crop of rye, which is valuable in the fall and the next spring for pasture. I sow clover with rye and wheat, expressly for pasture in the fall and winter. Cattle will eat blue grass in the field all winter in preference to corn fodder and oat straw, and will thrive on it. Colts will paw off the snow and eat clover and blue grass, in preference to fodder from the stack. Clover is the most profitable crop of grass. It yields two crops. I pasture the second crop, unless I wish to save the seed. I seldom cut a crop of hay when I can manage to make the cattle or horses mow it for themselves. By a little management, so as to have a crop of grass or rye for winter pasture, our cattle require feeding only from four to six weeks. Sometimes a few ears of corn a day is all they need.

Concord, Mass., June, 1867. R.

CUTTING GRASS EARLY.

As the haying season will soon be at hand, there is, I think, one point which was not noticed last season in the discussion in the *Country Gentleman*, in favor of cutting grass early,

and I think it is now time that the subject might be introduced again. The various grasses which grow in our meadows are perennial, and when we seed down a piece of ground for meadow with the kind of grass we wish to grow there, or even if good grasses come in without seeding, it is very important that the same plants should continue to grow healthy and vigorously year after year, and produce thick and heavy crops, free from weeds or thin and almost barren places.

Now it is self-evident that if weeds and other plants can be exterminated by mowing, that there are especially some stages in the growth of grass in which meadows may be injured by mowing. At what time, then, can it be cut with the least injury to the plant itself? In cutting timber it is usually observed that young and thrifty trees throw up sprouts from their stumps much more vigorously than larger and older ones; also when cut in the winter preceding, or during the growing season, than in the autumn when it is just over with. Farmers usually take advantage of this fact in cutting bushes, and wait until the season's growth is completed. It then gives the vitality of the root such a shock, it being at this time in an exhausted state after its utmost exertions are fairly over with, that its constitution is irreparably ruined. Not only in cutting bushes, but in cutting weeds, is the same principle found by practice to be true; and by cutting them at this season great headway is made in their extermination.

Why can we not apply the same principle to our faithful grass plants in the meadow? Why should we let them become grown up, and their forces all expended, and then ruthlessly cut down all, trusting to luck to retain even one spark of life in them? Would it not be better to prune them graciously and in season? Why should we wait till our grass is all what is styled "fit to cut," (that is, its greatest degree of perfection for fodder attained) before a single stroke is cut, and more than half can not be harvested until it gets too ripe? It is true perhaps, that more weight is attained then than when cut when two-thirds or three-quarters grown, but is it really worth so much for milk or for fat? and besides do we not get it all in a second crop or aftermath? Then again are we not much safer against a drouth just after haying, which has ruined irreparably millions of these little roots in a late cut meadow? and further are we not better prepared for a vigorous and healthy growth the next season? —*S. N. Beers, in Country Gent.*

WORKING BULLS.

I have one of Emery's endless chain powers to drive my hay cutter. My bull is an Alderney, two years old, weighing a little over 900 pounds. I put on the brake and had him led into the power, where he had a small feed of oats given him. While he ate these he was groomed and caressed. Then, while he was eating, the break was slacked a little, and as the floor moved down, (slowly, so as not to alarm him,) he stepped up to keep his muzzle at the oats. At the fourth lesson, he walked an hour, and cut hay enough to last my stock —some eighteen head in all—two or three days.

We have not had the slightest trouble, and so much does he appear to like the exercise, and the pleasant remembrance of the reward of good behavior, that I shall not be surprised if, when he happens to find the door open, he should go in and "run the machine" on his own account. I intend to put up a circular saw and let him cut my fire-wood.

Now for the advantages. The pampering and confinement which makes a horse run away, will, in time, make a bull devilish. The work I give him requires no harnessing; it is only an hour's walk up a hill of 13° elevation. It gives him an outlet for his superfluous spirits, it keeps him "in hand" and gentle, it wears away the growth of his hoofs, develops his muscle and improves his health. Have I not a right to expect my herd to be benefited by such management? I thought so before I knew Prof. Agassiz's opinion.—*Cor. Country Gentleman.*

PREVENTION OF SECOND SWARMS.—"A Beginner" inquires the best way to prevent second swarms or after-swarming.

He will find that if he removes the hive which has swarmed, or from which he has taken a swarm, to a new location, some distance off, say a dozen yards, he will not be troubled with after-swarms from it, because it will lose so many of its old bees that few remain who have the "swarming fever."

I advise this way with all confidence, for Italian colonies. I have tried it for several seasons, with them, and never had it fail. I have an impression that the common bees may sometimes lose too many bees if removed so far, though a correspondent informs me that he has, by my advice, so moved his common bees, and they did not lose too many. I have noticed that the Italians are quicker to find their old home when it is removed, if it has any distinctive color or marking about it, than the black bees.—*Mrs. Tupper, in Prairie Farmer.*

—Hiram Bartlett, in a late address before the Ohio Dairymen's Association, made the following statement: The amount of capital invested in the dairy business of Ohio, is estimated at $264,628,850, of which the cows, at $50 each, amount to $34,516,750; the land at $50 per acre, $207,101,100; teams and implements, $23,011,000. In 1865, the number of milch cows in Ohio was 695,337; the butter product, 32,554,835 pounds, and the cheese product, 16,940,213 pounds.

TRAINING OF THE TOMATO.

We have laid aside for publication an article on the "Waste of Force in Vegetation," by Mr. Thomas Meehan, editor of the Philadelphia *Gardener's Monthly*, which suggests a philosophical theory to account for the practice of old grape growers who cut off the tendrils of the grape vine. The theory is, that these tendrils exhaust the vital force of the plant in their efforts to discover or reach something to cling to. Here, perhaps, is the philosophy of trellising grape vines, of bushing peas, of poling hops and beans, and of supporting tomatoes. Now, boys, try the experiment illustrated by the cut. You all know how the "support" of a good bed saves or recuperates *your* vital force, and increases your ability to labor. Perhaps a tomato plant may in like manner enjoy the stakes and hoops on which it rests, and may possibly express its gratitude by expending the "force" thus saved in the production of superior fruits.

For the New England Farmer.

NOXIOUS ANIMALS, INCLUDING INSECTS.---NO. VIII.

Plant Lice.---Concluded.

It appears that the grain-lice of 1861, came and perished, regardless of the presence or absence of these brave and renowned enemies, the *Coccinella* and *Chrysopa*—the lady-bird and golden-eyed, lace-wing fly, or other insect parasites. The lady-bird may be known by a quaint and unscientific description of the man who called it "a miniature spotted mud-turtle"(tortoise). The golden-eyed fly which is about one-half an inch in length, Harris describes as "of a pale-green color, having four wings, resembling delicate lace, and eyes of the brilliancy of polished gold, as its genume name *Chrysopa* implies."

Having read that the first mentioned, both in the young and adult state, and the *larvæ* of the last mentioned, were wont to prey incessantly and voraciously upon plant-lice, I made diligent search for them in the wheat field mentioned in our last article, and became satisfied that their number was wholly inadequate to diminish the lice in any sensible degree. Writers on injurious insects are particular in their descriptions and commendations of these and other beneficial insects, that they may become known and appreciated by the cultivator. We do not doubt or undervalue their services, but until they become more numerous, they will be wholly inadequate to the suppression of plant-lice. We have seen how little they accomplished in checking the increase of the grain-louse in 1861, and I have never had an apple tree, when once infested with lice, cleared of the pests by the services of the parasitic insect or birds. We have abundant means of repelling plant-lice on a small scale, but their possible increase in any year renders them a power for mischief, entirely beyond our control.

One valuable fact was established by inquiries and investigation in 1861,—that while late sowed spring grain was much injured, winter and early sowed spring grain suffered very little. Our acre of wheat, that year, was an average crop in quantity and quality.

The sum of our protracted remarks in regard to these Aphidians of the grain, is that judging from the past, they may not often be expected to visit us in large numbers; that their advent cannot be prevented, nor their attacks repelled by ourselves and our insect and bird allies, when they do come; and that their injuries may be mainly avoided by early sowing.

In regard to spring wheat, of which I have not failed to have a fair crop in any of the last seven years, I consider early sowing, irrespective of lice, indispensable. My practice is to sow on dry land, after corn; ploughing in the fall, and harrowing in the seed the spring following, as soon as the ground is in a condition to be stirred. If it can be done in March a good crop is almost sure; if neglected till May, a failure is as sure. I have tried only two varieties of wheat, Java and Scotch Fife—prefer the Java.

The only plant-lice with which I have seriously to contend, are the *Aphides Mali*, or plant-lice of the apple-tree. Their attacks, with us, have been chiefly on young and rapidly growing trees and grafted scions. Sometimes they

are found on a luxuriant sprout or sucker of a mature tree; which sprout or sucker we are very willing to see checked, but are rarely on the mature and bearing branches.

Even where they are unwelcome, they are sometimes of some service in checking a too rapid growth late in the season, and in causing the young twigs to harden before the approach of winter.

Fumigation with tobacco is a common and effectual method of removing lice from house-plants; and a decoction of tobacco or solution of whale oil soap is frequently used in nurseries and fruit yards. Strong soap-suds, made from common soft soap is death to lice. The only difficulty in regard to these last remedies is in the application. If a syringe or garden engine is used, too much of the liquid will be wasted. When the twigs and small branches can be safely bent over and dipped in a dish of the louse-killing liquid, the work is effectually and cheaply accomplished. When this method cannot be used with safety, a saturated sponge or soft rag carefully applied, so as not to break the foliage, will do good service.

Some eight or nine years ago, the quince-trees in this vicinity, previously healthy and fruitful, were attacked with a blight, causing the foliage to appear, at first, somewhat hoary, or as if mouldy. This appearance was soon succeeded by the brown and sere leaf, and eventually, by the death of the shrub,—so that quince bushes only exist now with us, historically. Some hasty and partial examinations of this blight disclosed numerous but minute plant-lice:—a discovery which at the time, led me to the conclusion that they were the sole cause of the blight. But having since heard other causes of the destruction of the shrub assigned by intelligent cultivators, I have doubted the correctness of my first conclusions, and regret that a more thorough examination was not then made.

The *Aphis Brassicæ*, cabbage-louse, found also on mustard, turnips, and other plants of this order, is of a greenish color, partially covered, as is the plant which it infests, with an excretion in the form of a whitish powder. These lice are sometimes quite troublesome to the market gardener. I am informed by one of my neighbors, Mr. Whittemore, who has been an extensive and successful cultivator of cabbages, that these lice begin to appear about the time of the first setting out of the plants from the hot-bed, and continue till the latest harvest, in early winter; that he has never noticed a winged-insect, though he has never scrutinized the infested plants with a view to such discovery; and that they are accompanied by the same ant that visits the apple-tree lice;—from which we conclude that they are in the sugar manufacturing business.

His remedies were ashes, lime, and plaster in powder, applied separately or mixed, by dashing the same on to the infested parts, by hand. Several applications were necessary in some seasons to suppress the vermin.

I. B. Hartwell.

Wilkinsonville, Mass., 1867.

EXTRACTS AND REPLIES.

THE SEASON IN WINDSOR COUNTY, VT.

We have had the same subject to talk about here that they have in other places, viz.; "A cold, backward spring." The supplies of hay and grain for feeding stock was short, while the grass was still shorter; so that a good many farmers were plagued to keep their stock along decently till the grass grew. But the crisis is past; the pleasant summer is at hand, laden with blessings, and the farmers have abundant reason for anticipating good crops for the coming harvest. The hay crop in particular bids fair to be far better than that of last year.

Bright Summer has come with her beauties again,
Her warm breath is noticed on mountain and plain;
With sweet scented blossoms she's crowning the bowers
And nursing them kindly with sunshine and showers.

She's welcomed by all, both the young and the old,
She brings for them jewels far brighter than gold;
Whether lowly or humble, wealthy or poor,
With a smile of affection she enters their door.

Royalton, Vt., June 1, 1867. J. G. Bennett.

SPAVIN OF A YEAR'S STANDING.

Please inform me through the columns of the Farmer, if a horse which has a bone spavin of about a year's standing can be cured, and what remedy you would apply, and oblige

An Old Subscriber.

Ryegate, Vt., May, 1867.

Remarks.—We have so often "delivered ourselves" on this subject, that we are glad to reprodnce the following remarks by Dr. Paaren, Veterinary Editor of the *Prairie Farmer*, who says, "the application every second day, of a liniment, composed of two parts of olive oil, and one part each of creosote and oil of turpentine, will to some extent relieve pain, if not lameness. Blistering and firing are frequently employed, but with no better success than milder remedies, and at all events the cure only goes so far as to prevent the horse from going lame; but in this case even, we only call the failing *mended*, for it certainly is not *cured*, though the lameness may be so. We say 'mended only,' because the cure is somewhat similar in effect to the mending a broken or splintered lance-wood gig-shaft by splicing to it a stiff piece of wood or iron. The shaft is certainly mended, rendered safe, useable, and as strong as ever, but its elasticity, on which depends its chief merit, is forever gone; and this, in a minor degree, is the effect that mending a spavin hock has on its motion; though if spavin is taken in hand as soon as it is perceived, and before stiffness of the hock takes place, the horse may then be nearly or quite as well as he ever was. But the severest of operations will not restore elasticity if it has once been destroyed. 'Bone spavin' is a term applied to a tumor on the inside of the hock joint, proceeding from an ossific or bony deposit, which forms a junction of the small bones of the joint; of course preventing

the freedom of their action, and producing pain and lameness—a lameness that, in a plurality of cases, no skill, no treatment, no operation can beneficially effect."

PROFIT AND EXPENSE OF POULTRY.

I have noticed a number of reports of late on the large profits of fowls. I think they do not charge all the expenses, or the breed of fowls must be very small feeders. I now send you my account for 1866:—

Stock and Value, January 1, 1866.

27 fowls at 75c, $20.25; 8 late chicks, $3 20	$23 45	
13 ducks at 75c	9 75	
		$33 20
54 bush. F. feed, 25.10; 20 bush. oat meal, 17.85,		42 95
24 do. corn, 26.90; 18 do. cracked corn, 18.40,		45 30
18 do. oats, 14.15; 5½ do. meal, 6.50		20 65
5 do. potatoes, 3.00; 100 lbs. wheat, 2.45		5 45
321 lbs. scraps, 6.42; 12 doz. eggs to set, 5.23		11 65
24 doz. eggs set, at 38c, 9.12; 11 doz. duck's eggs, 4.47		13 59
2 ducks, 4.00; 4 roosters, 5.80, bought,		9 80
1 bbl. lime, 1.75; whitewash brush, 50c; salt, 15		2 40
3 boxes, shipping fowls, 75c; dressing poultry, 1.50		2 25
Laths and nails		7 08
Lathing, plastering and white-washing coop,		12 00
		$206 32
Profit		104 64
		$310 96

Stock and Value, January 1, 1867.

40 fowls, 75c, $30; 16 ducks, 75c, $12,	$42 00	
3 turkeys	3 00	
		$45 00
Sold 107 hens and chickens	102 39	
" 47 ducks, 45.89; 27¾ bbls. manure, 27.25	73 14	
" 130 doz. 9 hens' eggs, 37c	48 38	
" 15 " 1 ducks' eggs, 40c	6 03	
		274 94
Stock and eggs used in the house:		
7 hens, 70c, 4.90; 5 ducks, 1.25, 6.25		11 15
24 doz. 10 hen's eggs, 37c		9 18
39 doz. 3 duck's eggs, 40c		15 69
		$310 96

Whole No. hen's eggs laid	179 doz. 7
" " duck's " "	65 " 4
	244 doz. 11

I always get roosters from other stock, to breed from, otherwise they will soon run out.

Salem, Mass., 1867. James Buffington.

A NEW THEORY IN RESPECT TO BOTS.

From long and close observation, I am satisfied it is much easier to prevent horses from having bots than to cure them, even if chloroform, as recommended in a late Farmer, is a certain remedy. It is the generally received opinion, that after the fly has deposited its egg on the hair of the horse, the subsequent existence of the bot depends on the egg accidentally falling into the horses' food, or being nibbled off by him and swallowed, and thus reaching the animal's maw, where it matures, is subsequently discharged with the excrement, becomes a perfect fly, which again deposits its egg as before. This theory leaves the propagation of its species to the merest accident; a thing which has no analogy in nature, as the great Creator has nowhere else left the continuation of any species he has created to mere chance. But I am fully satisfied that this theory is incorrect, and that the reproduction of this insect is no more left to chance than is that of any other. My theory is, that the fly instinctively deposits its eggs at well selected points, near the vital parts, or near some large arteries and veins leading to those parts, where in a few days the animal warmth completes the incubation, and the larva with unerring instinct easily makes its way through the animal's porous skin, and flesh, if need be, to his natural home in the maw. Let any one wishing to satisfy himself of this, examine the eggs after they have been on the hair of the horse a few days, with a microscope, or without, if their eyes are good, and he will find it only a shell, with a hole in the lower end, where the larva has evidently made his exit.

As a remedy or preventive, it is only necessary to scrape off with a sharp knife the eggs every two or three days, or as often as any are laid, without any fear that they will fall into the horses food or be licked up by him. I have practiced it for many years, and my horses have had no trouble with bots. Thomas Ellis.

Rochester, Mass., Feb. 25, 1867.

Remarks.—For once, the generally received opinion agrees with the books. In Tenny's Natural History, recently published, it is said that there are in this country more than twenty species of the *Æstridæ*, or Bot-Fly family.

"The genus *Gasterophilus* comprises three species which infest the horse. The large Bot-Fly, *G. equi*, Linn., lays her eggs upon the fore legs of the horse; the red-tailed Bot-Fly, *G hæmorrhoidalis*, Linn., lays her eggs upon the lips; and the brown Farrier Bot-Fly, *G. veterinus*, green under the throat. By biting the parts where the eggs are laid, the horse gets the larvæ into his mouth, swallows them, and, clinging to the walls of the stomach, they remain there till fully grown."

This theory is adopted by Mr. Youatt, in his work on the horse, and by the American Cyclopedia, article Bots. But the books also assert that "bots cannot be injurious to the horse, for he enjoys the most perfect health while the cuticular part of his stomach is filled with them." This dictum of the veterinary schools of Europe, Dr. Dadd says, is contradicted by the stubborn facts of his practice as a veterinary surgeon. "On the strength of past experience," says he, "together with what Prof. Gamgee has written on the subject, I do believe that bots are often injurious to horses."

If science is thus at fault in its theory of the effect of this parasite, possibly it may be mistaken as to the means by which the bot reaches the stomach of the horse, and that our correspondent has made an important discovery in Natural History. We must confess that his reasoning is not entirely satisfactory to our own mind. His objection that the old theory leaves the perpetuation of the species to mere chance, is no more forcible than it would be in respect to other well-known provisions for the propagation of many inferior animals and plants. The hole in the egg, also, is as well accounted for on the old theory as his own, so far as we can see. Still we thank him for his thoughtful communication.

AN INFALLIBLE REMEDY FOR LICE ON COLTS.

Take equal parts of ground, pure, black pepper, powdered sulphur, and yellow snuff; it takes one-half pound of each for a yearling. Get a square tin dish, and mix the parts together, and apply it dry. Do this by holding the tin up against the colt and carefully and *faithfully working the pow-*

der into the hair next to the skin. Common brushing or careless working it with the fingers don't do it. It kills every louse in thirty minutes. Possibly some nits may escape, but a second application four days after will make sure death of them. This application is as harmless to the colt as so much dry sand. L. T. T.

South Royalton, Vt., June 11, 1867.

BLOSSOMING OF APPLE TREES IN MAINE.

Having a record of the time of the blossom of apple trees for eleven years, I forward it to you, supposing it may be interesting to your numerous readers. These observations were taken in latitude 44° 30′ north.

1857	June 4.	1863	May 24.
1858	" 6.	1864	June 1.
1859	May 27.	1865	May 28.
1860	" 24.	1866	" 30.
1861	June 6.	1867	June 9.
1862	May 26,		

It will be seen that the present is the latest by three days, of the eleven years; fifteen days later than 1860 and 1863, and about seven days later than the average time of blossoming.

OLIVER PETTINGILL.

Rumford, Maine, June 10, 1867.

REMARKS.—We thank our correspondent for the foregoing facts, which are far more valuable than the guess work with which we too often test the seasons.

In this connection we print the following table of the blossoming of apple trees in Mansfield, Mass., about four degrees south of Rumford, Me., and 28 miles south-west of Boston, where vegetation is probably ten or twelve days earlier than at Rumford, which was furnished to the NEW ENGLAND FARMER, June 4, 1849, by Isaac Stearns, Esq., who remarks that "May 9, 1830, and June 2, 1812, are the two extremes. Difference, 24 days; the mean of which is May 21. The mean annual blossoming for the whole fifty-two years, is exactly May 21. The mean of the first 26 years, is May 22, nearly; and of the last 26 years, is May 20."

1798	May 13.	1824	May 19.
1799	" 19.	1825	" 15.
1800	" 17.	1826	" 15.
1801	" 17.	1827	" 17.
1802	" 26.	1828	" 17.
1803	" 22.	1829	" 21.
1804	" 22.	1830	" 9.
1805	" 14,	1831	" 14.
1806	" 27.	1832	" 31.
1807	" 27.	1833	" 12.
1808	" 18.	1834	" 20.
1809	" 25.	1835	" 29.
1810	" 19.	1836	" 21.
1811	" 15.	1837	" 30.
1812	June 2.	1838	" 30.
1813	May 25.	1839	" 18.
1814	" 14.	1840	" 17.
1815	" 27.	1841	" 26.
1816	" 28.	1842	" 19.
1817	" 23.	1843	" 22.
1818	" 29.	1844	" 11.
1819	" 25.	1845	" 21.
1820	" 17.	1846	" 15.
1821	" 27.	1847	" 28.
1822	" 15.	1848	" 19.
1823	" 23.	1849	" 29.

The next year Mr. Stearns sent us the time of blossoming for 1850, which was June 3, one day later than the late season of 1812.

A ROLLER GATE.

I saw a gate last week at one of my neighbor's farm that was hung on a roller. He said there was a patent on it, and that it had been advertised in the FARMER. It is a common gate, very simple. If you cannot inform me who has the patent will you please make the inquiry in your paper.

Passumpsie, Vt., June 10, 1867. E. A. PARKS.

REMARKS.—We do not recollect about the advertisement, but in looking over our back volumes in an attempt to find what was referred to, we came across the following directions for making a cheap and simple gate of inch boards. Make the latch end piece four inches wide; the hinge end, eight inches; lower board, eight inches; next above, six inches; next two, four inches each; brace, six inches; the whole secured by wrought nails clinched, and hung with strap hinges. Such a gate, the writer says, can be made and hung, after the posts are set, in two hours. Now, who will answer Mr. Parks' inquiry?

FALL FEEDING.

Sometime ago, I saw among the "Extracts" in the FARMER, a piece headed "Fall Feeding." Many acknowledge fall feeding to be wrong, but practice it on the plea of necessity. I think one might as well justify himself in hiring money at 100 per cent., by the same plea. After a field of grass is mowed, let a child pass through the field two or three times a day, for several weeks in one beaten path, and this path can be distinctly seen the next summer, although not used at all that season. By this fact we may form some estimate of the damage done to a mowing field by the much heavier pressure to which it is subjected by being fed by cattle and horses. E. B.

Derry, N. H., 1867.

A LARGE WHEAT CROP.

A field of a trifle over one acre of ground was summer-fallowed and sowed with wheat in September, by one of my neighbors. It yielded forty-one and a half bushels of good wheat, besides some poor wheat. But for a storm in July which greatly injured the crop, it is thought the produce would have been still greater. A SUBSCRIBER.

St. George, Vt., May 29, 1867.

REMARKS.—For the honor of St. George, of the Champlain Valley, and of your "neighbor," may we not ask for a more particular statement of this crop?

KING-BIRDS CAUGHT CATCHING BEES.

Mr. Eli Cooper of Winchester, Mass., informs us that while sitting near his hives watching the operations of the little busy bee, which so earnestly improves each shining hour, he has repeatedly seen the king-bird descend, and, hovering for a moment immediately in front of a hive, seize a bee, always in its middle, with its body at right angles to the bill, and therefore plainly to be seen, and at once fly off with its prize. As Mr. Mosely, in the FARMER of May 25, found no bees in the crops of those king-birds which he killed, as he thought, in the very act of catching them, Mr. Cooper suggested that the bird may swallow only the honey, &c., and reject the carcass or shell of the bee.

In his valuable work on Bee-keeping, Mr. Quinby

says he believes the king-bird guilty of taking only drones, and asks, "If he devours workers as well as drones, why does he not visit the apiary long before noon and fill his crop with them? But instead he waits until afternoon; if no drones are flying, he watches quietly till one appears, although workers may be out by hundreds." He adds he has shot them after seeing them devour a goodly number, but in every instance the bees found in their crops were so crushed that it was impossible to determine whether they were the remains of workers or drones.

SEASON AND CROPS IN CENTRAL MASSACHUSETTS.

We have had a very wet and backward spring, but now

"The sky is clear, the woods are bright,
The fields are fresh and green,
And summer, in her robes of light,
Reigns o'er us like a queen."

Wheat, oats, corn, &c., look splendidly, although the latter is a little backward on wet land. The crows have been somewhat mischievous, and we find it hard work to frighten the black varmints. The weather has been favorable for grass and there is a prospect that we shall cut a heavier crop than we have for several years. Rye is a very little winter killed, but in most spots it shows a very *wry* face. From present indications I think we shall have apples, peaches, pears, and plums in abundance. CHIEL.

Shelburne, Mass., June 17, 1867.

CROP OF WHEAT IN ST. GEORGE, VT.

In reply to our request for further particulars in relation to the crop of 41½ bushels of wheat raised on a little over one acre of ground in St. George, Vt., mentioned in the Farmer of June 15, we have received the following brief statement:—

The land on which the wheat grew, is about eighteen rods long by ten wide. The ground was plowed in the spring of 1865, but neither planted nor sowed until September or October, when it was sowed to winter wheat. The crop was harvested in August or September, 1866, and threshed in March 1867, and the grain then measured. The result was forty-one and a half bushels of good plump kernels and some shrunken wheat, as we Yankees call it. L.

St. George, Vt., June 15, 1867.

REMOVING WARTS ON COWS' TEATS.

I should like to inquire what is the quickest and easiest way of removing warts from cows, teats? Also should like to know the philosophy of planting potatoes near together. I know one man in this town who makes the hills two feet apart and gets first rate crops. Why is it?

Ashby, Mass., 1867. J. N. Davis.

Remarks.—Tie a horse hair tightly around the wart, and after a day or two, take a piece of caustic potash, and draw it about the wart once each day, until the wart is eaten away. Or, shave the end of the wart until the slightest blood appears and then touch it with the caustic. The caustic may be found at drug stores.

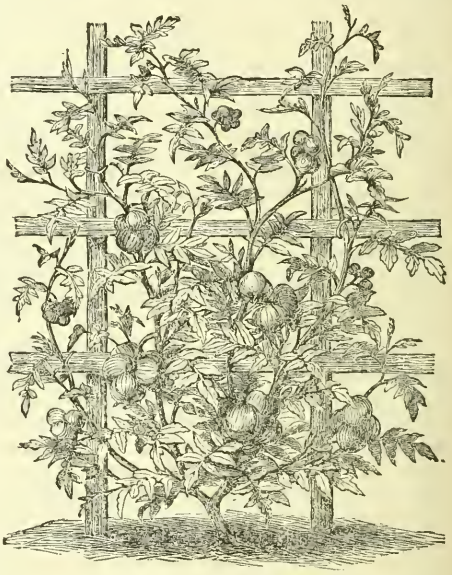
We do not quite understand what our correspondent desires to learn about the potatoes. The usual way of planting is two to three feet apart, each way, in hills. Some persons, however, plant in drills, and place the seed only a few inches apart, thinking they can obtain a larger crop by this mode of planting.

TRAINING AND TRIMMING OF THE TOMATO.

Please give in your next issue the best mode of training and trimming tomato plants.

Webster, Mass., June 16, 1867. A. G. Sibly.

Remarks.—Last week we gave a cut illustrating a simple means of training the tomato by means of three hoops attached to three stakes. We now present a trellis, which may be made by firmly



setting two stakes four feet in length, three or four feet apart, on a line with the plants, and nailing lathes or sticks, nine inches apart on the stakes, to which the plants are tied by any soft string.

Mr. Burr, in his valuable book, the Vegetables of America, says that when the two first trusses of bloom have expanded over each shoot, the shoot should be stopped by pinching off the portion which is beyond the leaf above the second truss, and no more lateral shoots should be suffered to grow; but the leaves must be carefully preserved, especially those near the trusses of bloom. The number of shoots on each plant will vary according to the strength and vigor of the particular plant; but three or four will be quite enough, leaving about half a dozen trusses of fruit. The ripening of the fruit may be hastened by setting the plants against a south wall or close fence, and liberally watered if the weather be dry.

The *Gardener's Chronicle* gives the French method as follows: "As soon as a cluster of flowers is visible, they top the stem down to the cluster, so that the flowers terminate the stem. The effect is, that the sap is immediately impelled into the two buds next below the cluster, which soon

push strongly, and produce another cluster of flowers each. When these are visible, the branch to which they belong is also topped down to their level; and this is done five times successively. By this means, the plants become stout, dwarf bushes, not above eighteen inches high. In order to prevent their falling over, sticks or strings are stretched horizontally along the rows, so as to keep the plants erect. In addition to this, all laterals that have no flowers, and after the fifth topping, all laterals whatsoever, are nipped off. In this way, the ripe sap is directed into the fruit, which acquires a beauty, size, and excellence unattainable by other means."

But in ordinary field culture, and by those who raise tomatoes for the market, little attention is paid to training or trimming.

THE CUT WORM.

As the origin and habits of the Cut Worm have been a subject of doubtful disputation, I will here relate my experiments. The latter part of last August I procured some of the worms, placed them in a box with earth, fed them on tobacco leaves until they refused to eat, and buried themselves in the earth. In two weeks I dug them up and found they had gone through a state of transformation, each one being encased in what I shall term a sarcophagus, about an inch in length, being pointed, and resembling in form a gimblet handle, with traces of legs, wings and horns thereupon, denoting it would come up a winged animal. I broke open one of them and found it to contain thousands of eggs, about the size of a grain of sand. I covered them up again, and in the latter part of September they came up brown millers containing the eggs. These millers deposit their eggs in the fall upon decaying vegetation, and die, their mission being fulfilled. The eggs remain amid the wreck of decayed vegetation, and are ploughed under in the spring, and as the ground warms and vegetation increases, they burst their fetters, and the worm renews his ravages. And so on through successive generations. The leaf tobacco worms, with which I have likewise experimented, remain in their sarcophagus until spring, and come up large white millers, which deposit their eggs upon the plant in the stillness of night and morning, and in eight and forty hours they become worms three quarters of an inch in length. They sometimes are found upon the tomato plant, varying somewhat in their outlines, but the insect is the same. LEANDER MORTON.

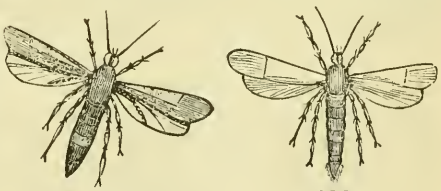
Hatfield, Mass., June, 1867.

REMARKS.—After these experiments, we are confident that our correspondent is not only better prepared to contend against the ravages of these voracious worms, but he has a new interest in their history. Several years ago, Prof. Harris, author of a most valuable book on Insects Injurious to Vegetation, tried a similar experiment with quite a large number of cut worms, gathered in June and July, from near cabbage plants, potato hills, cornfields, and the flower garden. They were all very similar in appearance, though different in size. They were soon changed to what naturalists call chrysalids, a preferable word, perhaps, to that used by our correspondent. The word sarcophagus, according to Webster's Dictionary, is now generally used to denote any stone coffin or receptacle for the dead. Primarily it meant flesh-eating, and at first it was applied to coffins made of a kind of lime stone that consumed the flesh of bodies in a few weeks.

Between the twentieth of July and the fifteenth of August, Mr. H. says his chrysalids changed to the moth state, and came out of the earth. Much to his surprise, however, these cut-worms produced five different species of moths. The annexed cuts illustrate the regular transformations of the peach tree borer, and other high orders of

Worm. *Cocoon.* *Chrysalis.*

insects. Most of the insects, says Mr. Harris, as they leave off eating, spin around their bodies a sort of shroud or cocoon, into which some interweave the hairs of their own bodies, and some employ, in the same way, leaves, bits of wood, or even grains of earth. Other caterpillars suspend themselves, in various ways, by silken threads, without enclosing their bodies in cocoons; and again there are others which merely enter the earth to undergo their transformations. The cut worms form no cocoons, but are changed to chrysalids in the ground, and as our correspondent says, appear



Female. *Male.*

as brown millers, which, after a brief existence in the winged state, and after depositing their eggs, disappear—having finished their course, and provided for the perpetuation of their kind.

RAISING ROOTS ON GRASS FARMS.

Brother S., of Roxbury, intimates that he thinks I should do well to substitute carrots as one of the rotation field crops instead of the potato. I think it would be a mistake to do so.

There are so many different circumstances and conditions in the cultivation of the soil that one theory or practice is not applicable to all. There is the market gardener, the fancy farmer, the silk gloved theorist, retired perhaps from some successful speculation, and sometimes a person with a very limited amount of land largely supplied with labor. Even the successful practices of either of these classes would be very irrelevant to the mass of farmers in a grazing district. It will not do for us to cultivate our farms as I see it stated Horace Greeley does his, at an expense of four or five times what the products might be bought for in market. We must cultivate to a profit. True, some of us cultivate too much for the *present* profit. In stirring the soil, the first object should be the preparation of the land for an abundant hay crop. That

being the staple product, and the most economical and only reliable cattle feed. All other crops, when made secondary to that, and rightly economized, may be raised in sufficient supply for most farms. One of the greatest obstacles in the way of farming generally, is inability to get over our meadow land with some cultivated crop as often as it needs resuscitating. Hence the necessity of keeping land but one or two years at most under the plough; and of cultivating such crops as can be grown on a large number of acres in a year, to fit it for seeding down.

The carrot seed is one very slow to germinate, tender and delicate. The ground, for its successful cultivation, needs a tilth and richness too great to introduce it as a rotation crop on our mountain farms. The almost endless amount of labor required in dressing a carrot field, at a season when labor is from forty to forty-five dollars per month, or from two to two and a half dollars per day, is no inconsiderable item. And then the crop when introduced as above, might be set down, instead of twenty-five or thirty hundred bushels per acre, more safely at one third, or at most, one-half of that amount.

The different varieties of the beet and turnip may with much more propriety be introduced as a rotation field crop. I like a variety, and have had a limited experience in raising the different kinds of roots for the last thirty years. But only to the amount of six or seven hundred bushels in a year of the other kinds, and to the amount of three, and not less than one of the carrot, for the last fifteen years. I now raise less than formerly of the carrot, and believe it is the case generally in this mountain section.

In your correspondent's war of extermination on weeds, I heartily engage, also against every other foe of our soil, and with as much vigor as though I expected the fight to close at the end of ten years.

OLD NED.

Washington County, Vt., June 4, 1867.

HEN MANURE.

I have seen in the papers many statements in regard to the profit of keeping fowls, but few of them make any account of the manure. Now I think, judging from my own experience, that the manure from fifty hens, if carefully saved, properly composted, and judiciously applied, is more valuable than fifty dollars' worth of any of the manures that can be bought in the market.

Pelham, N. H., June, 1867. B. F. CUTTER.

AGRICULTURAL ITEMS.

— The first strawberries were forwarded from Cobden, Southern Illinois, to Chicago, May 20.

—The Fair of the Franklin County, Vt., Agricultural Society will be held at St. Albans, Sept. 18 and 19.

—Geo. W. Rublee, of Berkshire, Vt., made 2000 pounds of maple sugar from 500 second growth trees this spring.

—Charles Washburn, of Reading, Vt., sheared 23½ pounds of wool from his two year old buck, which had only ordinary keeping.

—Mr. Oliver Wilkinson, of Townsend, Vt., has a ewe sheep that has had and raised twenty-two lambs in eleven years.

— A correspondent of the *Country Gentleman* says that the corn planting machines in use in Illinois, though operating well when new and on land in good order, are liable to clog, and leave the work badly done. An improvement is needed by which the driver shall have warning when the kernels cease to fall into the furrow.

—Vermont suffers less from dogs than any State in the Union, and yet five hundred sheep were killed by these useless curs during the past year in five counties of the State.

—Messrs. S. and W. S. Allen, Vergennes, Vt., inform us that a Short-Horn cow of their herd dropped a calf that weighed 141 lbs. before sucking.

— The most wonderful labor-saving contrivance is to be the Pennsylvania Agricultural College. The students will be taught farming without learning to work.

— Dyer and Seneca D. Townshend, of Wallingford, Vt., have recently sold their entire stock of yearling merino ewes to A. E. Smith of Clarendon, for fifty dollars per head.

—The Shenandoah Valley, (Va.,) farmers have recovered from the effects of the war to some extent, and now have growing the largest and finest wheat crop ever raised in that section.

—If you have a screw rusted into wood, or a nut or a bolt that will not readily turn, pour on a little kerosene and let it remain. In a little while it will penetrate the interstices so as to be easily started.

— Through the whole South the earliest vegetables and the first spring chickens are brought into the towns by the freedmen. "And they save their money to buy them a farm, to lead a different life."

— Horace Greeley says that he lost $1200 by the Fawks' steam plow failure in Illinois, but he still expresses the belief that within ten years, land will be plowed twenty inches deep at a cost of $1 per acre.

—The *Prairie Farmer* states that Dr. Hull has adopted the plan of planting plum trees at stated intervals in his orchards of peach, cherry, &c., as nearly all the curculios can be caught upon them so long as there is any fruit to sting.

—The number of sheep returned by the auditor of the county of Portage, Ohio, in 1866 was 137,633; while the number for 1867 is but 124,427,—a decrease of 13,206 in a single county, equal to a falling off of one million in the whole State.

—Last year 130 mules and 100 hogs were wintered in Ohio on the product of 65 acres of corn, and they had it before them all the time. The foddering season there is usually about five months in length.

—At a late discussion on steam cultivation, in England, Prof. Voelcher said that he believed if steam plows were placed on our strong clays we should not want any drainage at all, further than to carry off surface water. The superior cultivation would improve the mechanical condition of

the soil to such an extent, that every inch of rain that falls upon the land would be required by the growing vegetation. It now goes through the drains simply because it runs through the cracks in the ground; it does not go through the soil.

— Mr. J. Strickler, Monroe, Pa., who has been a farmer fifty-six years, wishes to know how the Yankees manage to give their sons a good college learning and keep them at farming after they have got through? Who said they did do it?

— A piece of roofing slate, any thin flat stone, or even a shingle, placed under canteloupes, watermelons, &c., will prevent the ground from extracting the flavor from the lower part of the melon, and also considerably hasten its ripening.

—Mr. H. Murray, of Clay, Illinois, has a plastic slate roof which has been on eight months, and after a three hours' rain the water has a bad taste, which unfits it for a cistern. Besides this, it gives the water a yellow tinge, which strikes into the white clothes when washed.

— From a ewe 22½ months old, Mr. W. B. Denio of East Rupert, Vt., sheared a fleece, the growth of 11½ months, which weighed 18 lbs., and she had a lamb by her side. Her first fleece weighed 12¼ lbs. She was sired by C. D. Sweet's (Hammond) buck of North Bennington.

—On Mr. J. T. Warder's farm of 600 acres, near Cincinnati, Ohio, there are four fields of seventy or eighty acres each, on which the rotation is to turn over the sod for corn, which is followed by wheat, then seeded to clover and timothy, and then mowed or pastured two years.

— The following grumble at the weather should be read, as it was evidently written, in a wet spell:

I'd like to hire a man to stop
Each crevice in the sky;
Though rain may benefit the crop,
I'm not a crop, not I.

— A correspondent of the *American Agriculturist* says that rats dislike coal tar very much, and that he is in the habit of daubing it about their holes and runs, with good results. Coal tar mixed with sand to the consistency of thick mortar, is an effectual stopper to rat-holes.

— We are informed by a correspondent that Mr. Daniel Carleton of North Andover, Mass., sold last year pigs to the amount of $160, the product of two litters of one sow six years old, besides three which he kept himself. There were ten pigs in the first litter and thirteen in the second.

— In regard to killing Canada thistles by plowing and hoeing, a correspondent of the New York Farmers' Club says he has a piece of land that has been hoed 15 years, and there are ten thistles now to one where he commenced. He succeeds better in mowing them when in blossom.

— Mr. D. T. Clough of Thetford, Vt., informs us that a buck of his from Sanford's Comet, which "was kept on poor swail hay, until March, and without exposure to the sun, this spring, sheared 21 lbs., and after shearing weighed 93 lbs." What would the fleece have weighed if the animal had been fed up to 125 lbs.? He was two years old.

—Prof. Vandervier states the grape growers on the Rhine, after experimenting a thousand years have found that a particular grape is required for a particular soil, which is of limited extent, and that guano, when applied, so injured the quality of the wine that the guano had to be dug out and thrown away.

— Cattle are becoming so scarce in the Northern States that it was encouraging to read in a late Jacksonville, Fla., *Union*, that such immense herds of cattle are roaming at will through the wilds of that State and Georgia, as to prove a serious inconvenience to the railroad trains which traverse those sections.

—The Paris Exposition correspondent of the *Prairie Farmer* says that Comstock's Rotary Spader, there on exhibition, has been tested and did most excellent work; that it is attracting very general attention, and is now being manufactured in England, Austria and Prussia, and that the implement is greatly improved over anything he had seen in this country.

—A creosoted sleeper, put down on the Stockton and Darlington Railway, in England, in August, 1841, was taken up March 14, 1867, after nearly 25 years' service. The grain of the wood, although slightly discolored by creosote, is as fresh and apparently as tough as that of newly-sawed timber, and the odor of creosote is as strong as if the wood had just been operated upon.

A SUMMER SUNSET.

It seemed as though the gates of heaven
Were opened in the West,
And all the angels looking out,
In shining garments drest.

Their radiant forms went flitting past
The gateway of the blest,
Then in a chariot of flame
They took the sun to rest.

—*H. M. L. in Rural New Yorker.*

—A correspondent of the *Country Gentleman*, whose experience with the Brahmas was unfavorable, says he had got out of patience with his common fowls, but when he commenced with the Brahmas, wishing to make a fair comparison, he gave them as good treatment as the Brahmas, and to his surprise they have laid more profusely, and thus far have proved, in all respects, superior to the Brahmas.

—During a late visit to the farm of Mr. J. T. Warder, near Cincinnati, the editor of the *Country Gentleman* was informed that in thirty years four wheat crops had been lost—in two instances from rust, and twice from freezing out. The crop of 1866 was a total failure, from the latter cause, throughout almost the whole of this part of Ohio. On 175 acres Mr. Warder did not cut a single sheaf! Land, labor, and seed, were a total loss.

—A dusting of dry wood ashes is recommended by W. N. Barnett, of West Haven, Ct., in the

Country Gentleman, as a protection from the curculio and other insects. His trees are trained low so that the ashes may be more easily applied. It should be done at *sunrise*, when the dew is on, as soon as the blossoms drop from the fruit, and repeated when washed off till the fruit is two-thirds grown—the object being to keep the fruit covered with a coating of ashes.

—A correspondent of the Lamoille *News Dealer* says he successfully defends his vine patches in this way: "Lay a board, one or more according to the size of your patch, between the rows, in such a manner as to afford shelter to toads in the day time, and leave it undisturbed, so that they will make their home under it, which they will do in great numbers. At night they sally out and devour every bug, and grow fat as aldermen."

—A correspondent of the *Prairie Farmer* at the Paris Exposition says, "The competition in plowing has thus far been between France and England; resulting very greatly in favor of the English manufacturers. The French journals attempt to apologize for this state of things by saying that the English competitors have brought with them chosen plowmen and horses. There is some point in this charge, yet nothing but very rude, ill-constructed plows, could do such wretched work, as the French plowmen have done. French plows are fifty years behind the age.

—Horace Greeley says that the year 1866 was remarkable for the general deficiency of its harvests throughout the Union. Former years were more palpably unfruitful—1816 especially so—1836 perhaps as meagre in its returns to the husbandman, but this in good part because he put forth too little exertion; but in no former year of this century was the failure of crops so widespread as in 1866. Wheat was less than half an average yield throughout; so that our country, which exported millions of bushels of this staple in the midst of our great civil war, has actually been importing for some months past, as she had scarcely done before since 1836-7.

ENRICHING THE SOIL BY TURNING UNDER PLANTS.

The practice of plowing plants under the soil to enrich it is not a new one, or one of doubtful expediency. It was practiced among the ancients, is continued to this time, and, under some circumstances, with most signal advantages. In cases where it is not convenient to keep much stock, the land may be brought to a high state of fertility by filling the soil with vegetable matter by plowing in plants of one kind or another, to become decomposed there. So of lands that it is desired to cultivate, and which lie on hills that are difficult of ascent, or are so far from the barn as to make carting manure too expensive. In many cases, too, with the aid of modern machinery, many farmers could cultivate more acres than they usually do, if they had the means of manuring them well.

We take it that the fact is well established that this course may be pursued with profit. A question remains behind:—In what condition will the plants afford the greatest benefit to the soil,—green or dry? Will some of our intelligent correspondents tell us?

WOOL AND WOOLENS.

Since January, we have received regularly from Washington a neatly printed quarto pamphlet entitled "Monthly Report of the Director of the Bureau of Statistics, Treasury Department," Alex. Delmar, Director. It furnishes a large amount of information in relation to the trade and commerce of the country. From the Report for May we copy the following statement in relation to the value of the importations of Wool, Sheep, Goat's and Camel Hair and manufactures thereof, during the months of January, February, March, and April of the present year:—

	Jan.	Feb.	March	April
Raw and fleece	$284,055	$458,134	$621,025	$747,255
Cloths & Cassim'rs	1,069,991	908,250	683,147	456,142
Waste or Shoddy	65,946	68,398	53,092	23,075
Shawls	135,008	299,354	216,731	116,585
Blankets	13,956	4,102	2,956	1,296
Dress Goods	2,015,013	1,768,695	1,034,975	763,799
Manuf's not spec'fd	992,395	1,139,675	1,194,369	574,953
Total	4,576,364	4,646,608	3,806,295	2,683,105

Showing a grand total of $15,712,372 for the four months. From other tables it appears manufactures of cotton were imported to the amount of $12,941,009; of silk goods $6,202,-161. From which it may, perhaps, be inferred that our people are "bound to wear good clothes if they do not lay up a cent."

SHEEP SHEARING IN MAINE.

At the annual meeting of the North Kennebec Wool Growers' Association, in Waterville, June 4th, there was a show of sheep, a shearing festival, and a good time generally. We condense the accompanying tabular statement of the names of exhibitors, age and weight of animal, weight of fleece and length of staple of the differerent fleeces, from the *Maine Farmer*, who remarks: "An interesting scene it was, some fifteen of the most expert shearers in all the region, seated on the fresh, green grass, under the shade of trees, with coats off,

sleeves rolled up, and each of them on his knees holding his pet buck or ewe with one hand, while with the other he plied the sharp shears over the smooth, fat sides of the immense Cotswold, or followed the heavy folds of the neck of some Merino."

Class and Owner.	Live weight.	Age.	Weight fleece.		Staple.
Full Blood Merino Bucks.	lbs.	yrs.	lbs.	oz.	in.
Eph. Maxham, Waterville . . .	134	2	20	8	3
Joshua Nye " . . .	149	6	15	14	2¼
" " . . .	119½	4	10	10	2½
Elijah Blaisdell " . . .	142	3	17	8	2½
Geo. E. Shores, " . . .	118	3	14	1	3
Dr. N. R. Boutelle " . . .	138	4	18		2½
P. W. Ayer, Freedom	124	3	17	8	3
Seth Wentworth, China	113	5	12	15	2¼
C. K. Sawtelle, Waterville	99	2	12	15	2¾
Grade Merino Bucks.					
Russell Freeman, Winslow . . .	76½	2	11	4	3
Seth Wentworth, China	138	6	14	9	2½
Fred. B. Wing, Waterville . . .	112	2	13	9	2½
Full Blood Merino Ewe.					
Eph. Maxham, Waterville . . .	82½	4	9	14	2¾
" " " . . .	73	3	8	5	2¼
" " " . . .	51	1	8	9	2¼
Cotswold Buck, (washed.)					
C. P. Church, Bradford	193½	5	8	8	8
Grade Cotswold Ewe, (cosset,)					
W. J. Morrill, Waterville	127	2	12	4	5

FLAVOR OF CHEESE.

In connection with our remarks last week upon this subject, we publish the following extracts from a circular issued by Mr. Weeks to the patrons of the Week's cheese factory in Verona, N. Y. Mr. W. is the secretary of the American Dairymen's Association. Its suggestions are applicable to private as well as to factory dairying.

1. Never, under any circumstances, send a can of milk to the factory that has not been strained. A tin strainer pail is best, but a clean, carefully scalded cloth, stretched upon a neat little frame, which may be placed directly over the can, will answer. This I deem all-important, and any one who will examine the contents of the strainer at any factory will be convinced of it.

2. See to it that the milking be performed in a cleanly manner, and never tolerate filthy habits in milkers. It is unjust to the purchaser and to the consumers of our cheese.

3. Pay more attention to the cans, especially to the seams, covers and faucets. In hot weather be particularly vigilant. A thorough rinsing at night, and a rinsing, washing, scalding and sunning in the morning, will suffice, though it is very desirable that in hot weather the cans and faucits be scoured with salt twice a week.

4. When it is possible, avoid the use of all wooden vessels. *Tin is the only fit article for pails, &c.* When wood is used, extra care must be employed in cleansing. Beware of freshly painted pails, for their use is dangerous.

5. See to it that when the cows are driven from the pasture, they be not chased by dogs, nor in any way hurried and heated.

6. Always have leaky cans promptly repaired.

7. In portions of the year, when milk is sent to the factory only once daily, always put the night's milk into the can (into two if you have them,) leave the cover off, set in a cool place, and stir the mass with a dipper several times during the evening."

WASTE OF FORCE IN VEGETATION.

There are many facts in vegetable growth that are wonderful and mysterious. A common pump will raise water some thirty feet with comparative ease, but with all our contrivances of air-chambers and complicated machinery, it is difficult to raise it seventy-five or a hundred feet. Yet how readily the sap "runs" to the topmost bough of the highest trees—though the perpendicular ascent may be from two to three, or even four hundred feet, as in the case of the Great Trees of California! What makes it go up?

The following article does not answer this question, but it states some curious facts and theories which we think will interest every one who has trained grape, hop, bean or pea vines. It is entitled, "On the Consumption of Force by Plants in Overcoming Gravitation," and was written by Thomas Meehan, Editor of the *Gardener's Monthly*, and published in the Proceedings of the Academy of Natural Sciences, Philadelphia.

Every one interested in Horticulture knows how uncertain is the successful cultivation of the grape in the United States. The vines usually flourish well for a few years, but in most instances become the prey of numerous diseases before they attain any very great age.

In remarkable contrast with this general failure is the fact that grape vines growing over trees are generally healthy and fruitful to a remarkable extent. Branches from unhealthy vines on trellises, when they can get to ramble over the twiggy branches of a neighboring tree, resume the health and vigor lost by the parent or main vine.

These facts have had numerous observers, and are generally admitted. They have been frequently discussed in Horticultural journals; but every theory hitherto brought forward has been refuted. For instance, it has been suggested that the partial shade afforded by the tree benefited the grape vine; but it is as perfect when growing over low bushes, on hot banks, exposed to hot and dry temperatures, as when luxuriating among the shady branches of the tallest trees. Again, it has been suggested that as the vine is supposed to like a dry soil, the roots of the tree tended to absorb superfluous moisture, and thus furnished the best conditions for the vine roots; but healthy vines are found on trees in impassable swamps; besides, the cases of branches from trellises before alluded to, answer this supposition. Some have thought that as the foreign vine, growing un-

der glass, thrives there so well, principally on account of humid atmosphere, the evaporation from the trees' foliage might benefit the vine growing over it; but it has been further observed that they grow as well over dead trees as over living ones; and so on, in like manner, every theory has been refuted, and the true reason unexplained.

I think Mr. Darwin's discovery of tendril motion will afford the key to this phenomenon, and enable us to form a new theory as to the origin and employment of force in vegetable growth.

Mr. Darwin has shown that the tendrils of plants are in continuous motion for a long time until they find something to cling to, when motion at once ceases. Motion is an attribute of vital force; and vital force, whatever be its origin, must be sustained by nutrition.

There are two forms of motion. The one we call growth, which is the motion of the cells individually; the other, in animals, we call muscular motion, is the movement of the cells collectively. This tendril motion, unnamed because until lately unknown, is analogous to animal muscular motion, in its being a collective movement of the parts.

In animals we know that nutrition will only supply a given amount of force, and that if muscular motion receives an undue proportion of this force, growth (cell motion) suffers. In common language, the over-run horse gains no flesh. On the other hand, the disuse of muscular power fattens the animal. If the same division of motion exists in plants, and Mr. Darwin's paper shows it does, it necessarily follows that if one form gets more than its due share, the healthful balance is destroyed—in other words, the force necessary for excessive tendril motion in the grape vine exhausts the nutritive powers of the plant to supply; growth suffers, and disease ensues.

To apply this principle to the case of unsuccessful grape culture, we find in no system of grape management is any provision made for arresting tendril motion,—but on the tree thousands of little twigs invite the tendrils at every turn. No motion is expended except for what we might almost term healthful exercise, —the balance is used in growth.

Observation on many species of climbing vines under similar circumstances confirms these views. The growth and general healthfulness of every kind of vine, is in exact proportion to the climbing facilities afforded it. The garden pea will furnish a ready means of testing this proposition. It will be found that difference in vigor, general healthfulness, and longevity, is strikingly in favor of those grown on twiggy branches. Peas unstaked, grow weakly, bear early and sparing, and die young. Honeysuckles ramble to great heights and have large luxuriant foliage on fine wire trellises, but when dangling to one straight stick they grow very little indeed. The most striking instance that came under my observation was in some *Wistaria sinensis* which had been trained to form self-supporting dwarf trees. The branches would only grow two or three feet in a season, but a few of the shoots in time bending over and reaching the ground, where they found a natural support, would grow thirty feet during a single season. The observations in this way were so uniform, and the materials being everywhere, any one can verify this without it being necessary for me to particularize further instances.

Every effort of nature is but an endeavor to accomplish an object. The history of a plant's life is a struggle with gravitation. The purpose of that struggle is with the Author of its existence, but its immediate object is to elevate itself from the earth. The force required for this is very great. In its young days, however, it goes on with vigor,—taking no thought, as it were, of to-morrow,—but, as it grows older, it becomes bowed down by the weight of its own accumulations; gravity tells on its wide-spreading branches, reminding it of the growing weakness. It then prepares itself for its final dissolution by producing fruit, which, fully accomplished, the struggle with gravitation ceases, and dust to dust returns.

The whole of this enormous motive force must, as we have seen, be derived from nutrition,—and the proper proportion due to each form of motion must be provided and paid to it, or deranged action be the inevitable consequence.

For the New England Farmer.

NOTES ON THE CONNECTICUT VALLEY.---NO. I.

Scenery---Soils---Tobacco---Corn.

The Connecticut River valley has had a reputation for fertility and beauty of scenery unrivalled perhaps by any other section of the New England States. By reason of this reputation I was prepared on coming to this place, to expect not only fertility and beauty, but a high grade of agricultural information and practice. I will not say that I have been altogether disappointed in these respects, for I have not had sufficient opportunity to make up a final verdict. I will, therefore, just record my impressions as to how things here strike a stranger.

Much as has been said respecting the varied beauties of the scenery of this section, only the past summer a noted traveller expressed surprise at the comparative low estimate of the attractions of this locality; when, according to his opinion, they were far greater than any he had ever met with in any or all of his travels abroad. Be this as it may, a person having a taste for such things cannot fail of finding localities of very great attraction and of greatly varied character.

This matter, however, I regret to say, does not occupy so prominent a place in the estimation of farmers as it ought. If the masses

could be brought to the cultivation of a taste for the beautiful in nature, what might we not be led to look for of beauty in the surroundings of their homes and possessions? Instead of seeing residences unsheltered by protecting trees; grounds unadorned by shrub or flower; fences dilapidated; farm implements laying promiscuously around; neglect enstamped on every side.—we should see homes that showed the unmistakable signs of cultivated taste, diligent care, and wise regard for all the *true* enjoyments of life. If the poet is correct in saying that "a thing of beauty is a joy forever," a development of a taste for it will not fail of future reward, but forever expand in the beautiful world of light, unmarred by the clogs of corroding care, and unincumbered with the infirmities of the flesh.

There is quite a diversity of soil even on the very banks of the river. Of that part of this town which borders on it, but little is subject to overflows during the greatest freshets. The *meadows*, as they are termed, are more or less flowed every spring, and some of them at other seasons of the year. These inundations add greatly to the productiveness of these meadows, so far as grass is concerned. So far as my observation extends,—from Springfield to Hartford,—they are not very good for grain or tobacco. I incline to think the water-level too near the surface, the soil too cold and compact. Then we have clay and sand, loam and sand—much more of the last than I was prepared to expect. This whole section seems to be made up of contrasts. Clay suitable for brick is found side by side with sand suitable to combine with the clay for the same purpose. I was struck with the productiveness of these sandy soils in grass, as compared with that of what *appear* to be the same soils in southern Massachusetts. The clays are not as desirable for general farm purposes as the sandy loams. Tobacco is never put on them, and grain does not do well. They are so compact that underdraining must be resorted to to bring them into good tillage condition. Draining, however, during these scarce times for labor is not entertained. No one thinks he can afford it.

The *treatment* these lands have been subject to has been suicidal. Immense tracts have been in past years cropped with grain—rye mostly—year after year, with little, and in most cases no manure. Distilleries were formerly in close proximity to each other here. They *stimulated* the farmer to run his land in grain by affording him a sure market and good prices. In this way the past generation robbed the present of their rightful legacy,—a description of robbery that deprives one of all chance of self defence. How to restore these lands to a profitable state, is now with some a very important question. I can scarcely see how it can be done with any prospect of profit to those who attempt it. It really seems as if they must be left to the recuperating influences of rest. If tobacco had not come into general culture here, it is not hard telling what would have become of very many farmers who, pursuing the *skinning* process, became more and more involved in debt each succeeding year. Since its introduction, debts have been paid, new buildings erected, old ones repaired and the general surroundings improved. It seemed to have been to all a great source of income. Its effects, however, on the general improvement of the farm are questionable. About all the available manure made upon the farm is husbanded for the growth of this crop.

The general farm management in this locality, excepting as modified by the cultivation of tobacco, is much the same as in most parts of New England. Where tobacco is not grown, however, more manure is applied to other crops, and consequently better yields of grain, vegetables, &c., are secured. Many farmers here plow about all they can find time to in the fall; especially their tobacco lands. Some sow these with rye, to turn under in the spring in time for setting their tobacco, thinking it pays well in increased production, which I think highly probable, as a large amount of vegetable matter is thus obtained from these highly manured fields, many of which have been used for several years for the same purpose. I have been shown fields on which this crop has been grown from ten to twenty years, without any perceptible decrease in the crop.

There is a feeling of delicacy in commenting unfavorably upon the practices of others, especially respecting matters that people are very sensitive about. Almost every farmer considers his modes of doing farm work as good or better than those of any other man, and he regards a hint to the contrary as a personal insult. How to approach such people, hoping to do them good, is a very nice question to solve. I will venture however to chronicle my impressions, hoping that I may be forgiven, on the ground of good intentions, if not on that of useful criticism.

It strikes a stranger as being far behind the times for three men to go into a field, prepared for planting corn by furrowing with a plow both ways, with a wagon load of manure drawn by two yoke of oxen, and all three putting it into the hills, then each one tying on a pocket in front with corn in it, to drop and cover each for himself, leaving the team unemployed until the load is covered; then go for another load. I should not allude to this great waste of time and consequent expense, if this practice was not one of quite common occurrence here. When I first saw it, I recalled the labor saving processes and machinery employed at the West, and in other sections.

Any one at all familiar with corn planting, can but see that the practice I have alluded to is many years behind the times, as well as an extravagant waste. When a boy, I was expected to drop corn on manure as fast as three

and four men could cover with hoes, and did not consider it a hardship. A man can not put his hand into a pocket and drop each hill separately and cover, without a great loss of time.

The after culture of this crop is also very imperfectly attended to. Very few hoe their corn more than twice, if ever so foul with weeds. I have seen fields the past season where the weeds overtopped the corn, and almost all I saw were very weedy, insuring a bountiful crop for coming years. This neglect of clean culture is in part owing to a press of other work, especially from the imperative demands of the tobacco, which *must* be attended to, or great loss will be the result. How far a farmer is justified in planting more extensively than he can well care for during the growing season, I will leave for each to decide for himself; being content with my own conviction that there is no profit in it, but on the contrary a downright loss.

As regards the best method of management of corn after maturity, much diversity of opinion prevails all over the country. I believe, however, it is the most prevalent idea that it is the most profit to cut at the ground at the proper time for curing both corn and fodder and putting into shocks or stooks. The shocking is almost universally prevalent here, but neglected or deferred until the leaves of the fodder are about ruined before cutting. To avoid frost or storms, many cut and leave their corn upon the ground for weeks before setting it up, exposing it to great damage by dews and storms. When harvested, very little care is taken to secure the fodder from stormy weather, either by getting under cover or setting up. I have no doubt but that two-thirds of its value for stock is worse than lost by these careless methods. In some sections of New England the fodder from an acre of corn yielding fifty bushels to the acre, is considered equal to a ton and a half of hay, when as much care is taken to secure it in good order as in the case of hay. In such sections, the prevailing practice here would be regarded as the sure road to the pauper asylum. K. O.

East Windsor, Ct., 1867.

For the New England Farmer.

THE GARDEN IN JULY.

The garden this month will, if it has been well tended thus far, furnish a variety of fruits and vegetables to reward the labors of the gardener. During this month, increased attention is needed in keeping weeds, &c., in subjection; they *will* grow as fast, if not faster than other plants. The improved machines recently introduced will enable the farmer to perform his haying and other laborious farm work so much easier and more rapidly, that time for the proper care of the garden may be found by the diligent farmer. An hour or two in the morning, while the dew is on, is more profitably spent in the garden than in the hay field. Stir the soil and the weeds often with the hoe; apply liquid manure, just before rain, or after sun set, at the roots only of such plants as need stimulating, covering the watered surface with dry soil. Water newly set trees and grape vines, keeping the mulch moist. Liquid manure will swell fruit very fast when judiciously applied.

Blackberries.—Tie new shoots to stakes or trellises; shorten main stem and branches to help growth of fruit buds, and pull up all canes not wanted for multiplying.

Celery.—Transplant till the last of the month; hoe and cultivate often. The excellence of the crop depends largely upon rapid growth and proper bedding and blanching.

Currants.—If particularly large specimens are desired, pinch off the ends of the shoots just beyond the bunches, and thin and give plenty of water or liquid manure. They will begin to ripen during the month; when fully ripe pick for jelly, preserves and canning. Prune and cut out old canes as soon as the fruit is gathered. The currant worm and other insects should be looked after and destroyed by all practicable means. Powdered hellebore is recommended to destroy the worm, &c.

Gooseberries.—Thin out the fruit where needed early in the month, and use the berries removed for sauce, pies, &c. Dust with sulphur on the first signs of mildew.

Grapes will need thinning where more than two or three bunches grow on a shoot. Treat signs of mildew with sulphur. Pinch off superfluous shoots to two or three leaves; also fruit branches two leaves beyond the last bunch. Attention in summer pruning, watering, &c., will be repaid with less labor in fall pruning, better wood, and superior fruit; insuring better fruit buds for next season.

Herbs.—Cut when in blossom; tie in small bunches or spread and dry in the shade, and save in papers or boxes, which will hold their aroma.

Melons need the same culture that is given cucumbers. To hasten maturity, place a board or flat stone under specimens.

Potatoes.—Early planted will do to dig for use; clear off and sow to turnips, spinach, or other late crops.

Raspberries.—As soon as the fruit is off, cut down old canes and thin out new ones. Three or four canes to a stool is sufficient; keep well hoed without disturbing the roots.

Seeds.—Some vegetables and plants will be maturing their seeds; save only the best, and that from the most perfect specimens, and from near the centre of the plant or vine. The earliest should be saved, as it tends to increase earliness; dry all, and put in a dry cool place in boxes or papers, labelled with variety and year of growth.

Strawberries.—After bearing is over, weed the beds and cut the runners where not wanted for new plants. Old beds may be renewed by first spreading on fine manure, then

spading in alternate strips, three feet wide, plants and all, and fining the surface well. The runners from the alternate strips left unspaded, will spread on to the newly dug spaces and soon stock them sufficiently. The old plants may be subsequently hoed up, and the spaces occupied used for paths or walks.

W. H. WHITE.

South Windsor, Ct., June, 1867.

For the New England Farmer.

TENANT FARMING, AGAIN.

In the FARMER for March 9, Mr. J. G. Hubbard offers a farm "on a lease on valuation, and all taxes paid," and states that he does so as "a test to anonymous contributors, who are pleased to air their theories in the public journals, from time to time, and to intimate to them that to be of value their suggestions must be practical, and they should be able to find those that will practice them."

Now I submit that a fair reading and construction of the article referred to by Mr. Hubbard, does not warrant the charge that its suggestions are not practical, for it is expressly stated, that "probably one of the best systems of tenant farming in this country, is that adopted on the Wadsworth farms in Western New York;" and that "here is a large number of farms, all worked under the direction of an able and competent manager, in a way that tends to the present and permanent advantage of the owner, while it makes a permanent and profitable business for all the good farmers that work them." To which is also added a brief account of the kind of farming and course of cropping pursued, showing a system of management that secures good tenants, and keeps the land in good condition, while these farms don't "have to go a begging."

Lest Mr. Hubbard should try to throw this aside as coming from an "anonymous contributor," or, were I to sign my name, as coming from a stranger, I will copy a short extract from the Memorial of the late Gen. James S. Wadsworth, delivered before the New York State Agricultural Society, at the close of its annual exhibition at Rochester, Sept. 23, 1864, by Lewis F. Allen of Buffalo, and published in the Transactions for 1864, page 71.

"Probably no agricultural property in the country, so extensive in domain, has been arranged into a better division of individual farms, and their husbandry directed with more systematic economy on the part of the landlords, than those of the Wadsworths. The soils were applied to the crops most congenial to their natures, and which yielded most profit on their outlay; and as proof that the mutual interests of landlord and tenant were thoroughly studied, I understand that quite three-fourths in number of the tenants now on the farms are those, and the descendants of those who occupied them in the lifetime of the elder Wadsworths." It is also stated that "the moral and pecuniary condition of the inhabitants dwelling on the Wadsworth farms is as high, and the line of husbandry has been as good, in the average, as among the smaller farmers who hold their lands in fee—and the general agriculture of Livingston county is of no mean order."

Undoubtedly the editors of the FARMER have read this memorial of Gen. Wadsworth, who, after having three horses shot under him, was mortally wounded in the sanguinary battle of the Wilderness; and have also heard of the Wadsworth farms and farming in the noted fertile valley of the Genesee, and can assure Mr. H. of the general correctness of the account here given.

Now, in all candor, is not this practice of letting the Wadsworth farms "tangible and practicable," as any farming in Western New York, and does it not show that the account in the other article was something more than a mere "airing of theories," and that there is no trouble in finding many who will and do practice the suggestions there offered?

There can be little need of repeating facts and quotations to show that the statements in regard to tenant farming in England are equally true; and that being on a much more extensive scale is, if possible, still less open to the charge of being impracticable. Should such proofs be required, I may refer Mr. H. to "Observations on English Husbandry," by Hon. Henry F. French, Exeter, N. H., in the Patent Office Report for 1860, page 140, and also to other writers on English farming.

But perhaps Mr. Hubbard may say, "all this don't meet my case. I ask for a man to take my farm according to the suggestions in your article; that is the kind of proof I wish you to bring." Well, then, let us see about this; you offer your farm on a lease at 6 per cent., per annum, on valuation, and all taxes. Now if Mr. H. will read my article again he will see that there is nothing said in regard to the amount or price of rent, or whether it is to be fixed by valuation or in some other way. This, both here and in England, is always a matter of agreement between the parties. The valuations relate solely to the condition of the farm,—to crops on the ground, the labor done and manure applied by the outgoing tenant, or occupant. So it will be seen, that friend H. has made one impracticable condition, not warranted by the article objected to.

Next, Mr. Hubbard wants 6 per cent. on the value of his farm, and all taxes paid. Six per cent., I believe is, or was, lawful interest in Massachusetts, so he wants lawful interest and taxes besides. This would be better than money at interest, as then the taxes must be paid by the lender. And then as full interest is wanted, he seems to forget that there are few if any old sections, where capital is plenty, in which land will rent for the interest of what it will sell for. The greater safety and certainty of the investment, and the general rise in real estate, leads to investing money in land at a lower rate of interest, or for a lower income, than will be accepted in any other way. Hence, rents seldom range as high

as lawful interest; they do not here, nor do they in any of the older farming sections in which I am acquainted. On the Wadsworth farms the rent is calculated to average about five per cent. In England, in many cases, it is not over two per cent. Here, then, Mr. H. makes another impracticable condition. He asks more than his land can reasonably be expected to rent for. If offered for a fair price, he would doubtless soon find a tenant. At least, that is always the case here, where, although there are a good many farms let, either, for a money rent or a share of the crops, the demand for farms is always greater than the supply.

But Mr. Hubbard seems to have in view a still stronger test of the faith of anonymous contributors; as he intimates that such contributors should come and take his farm. To this I answer, for myself only, by saying, no sir, I thank you; I have a good farm of my own. But I may take the liberty to make a brief statement here of my own personal experience in respect to the "theory" of renting farms, which I have presumed to "air in the public journals." Beginning life with nothing but my hands, I first worked out, then took land, both for money rent and on shares, until, having got some money ahead, I bought a small place. This, in time, I was able to sell and buy my present farm, which answers my purpose very well. Having thus managed to get a get a good farm, I have a good deal of sympathy for those that, under similar circumstances, are tryng to get one, also. Not being able to do much hard work myself, I have been obliged to take some course to get my farm worked, and I have therefore given some thought, reading and observation, to this subject.

The article criticised by Mr. Hubbard aimed to give impartial directions and suggestions for the benefit of both landlord and tenant. That my remarks might be improved, I have no doubt. I could not expect to point out the very best way, or that applicable under all circumstances, but only to add my mite to the fund of knowledge that is intended to improve tenant farming, as well as other branches of agriculture.

But enough is written to show that my remarks are not open to the charge of being theoretical and not practical, because I do not accept or comply with Mr. Hubbard's "test," or because I do not furnish him with a tenant, on the hard conditions offered. Were it even true that he could not let it on any terms, it would not prove that such is the case with all farms. Or if tenant farming does not prove satisfactory in "Derry, N. H.," it may, by better management, or on better land, do better in other places.

I have frequently heard men strenuously contend that some particular course cannot be followed, or some operation performed, when I knew that the same things were in successful practice in other places. But not coming within the sphere of their experience or observation, and not fully understanding the process or course of proceeding, such men find it easier to doubt and dispute, than to read and investigate. Now I hope this is not the case with friend H., but that instead of insisting on impracticable tests he will investigate and find out the reason why tenant farming is not as practicable there as in other places. Then surely Yankee ingenuity will for once be unaccountably at fault, if a remedy is not applied.

Western N. Y., 1867. F.

For the New England Farmer.

THE BAROMETER FOR FARMERS.

Having had some experience with this instrument as a weather indicator, I desire to urge its more general adoption, as an agricultural implement. Many of our larger farmers use it already, and consider the money thus expended, a good investment; indeed, I never knew an instance where an intelligent observer would be willing to part with his, at several times its cost, if another could not be obtained. There has been many inferior things vended about the country as barometers, which are not properly barometers at all. For instance, a hygrometer was extensively sold, a year or two ago, as a genuine barometer; then there have been cheap, improperly made instruments put into the market. Of course, when such "traps" are sold the buyer is "sold" also. Many minds have been prejudiced by these means; others from an utter aversion to every thing scientific.

Nevertheless, it is an established fact,—established by the millions of recorded observations both in this country and in Europe—that weather changes are preceded by increased, or diminished atmospheric pressure. This the barometer faithfully indicates, giving warning from two to twenty-four hours in advance. It is vain at this late day, to argue that no dependence can be put on its indications. It is well known that it is considered indispensable on the seas, and that there it is most implicitly relied on. A sea captain would as soon think of sailing without his chart or compass, almost, as without his barometer. But for it, many a "gallant ship" would go down, which now outrides the storm, because "forewarned is forearmed"—a maxim as applicable on the land, as on the water.

On the farm, its principal value is in the saving of crops. Dr. Henry, of the Smithsonian Institute, estimates that five per cent. on all crops might be saved by the universal use of this appliance by farmers, amounting to eigty millions of dollars annually. Much valuable time is often wasted, as every farmer knows, especially in the haying season, from a lack of some means of foretelling whether the day will prove favorable or not; at such times a good barometer affords great aid, often sav-

ing its entire cost in a short time. I have used the barometer for meteorological purposes, for the past ten years, and have never regretted its purchase. Besides its value in calculating the weather, the observations of its daily and hourly changes is a source of much pleasure and profit. It awakens curiosity, stimulates thought, and leads the mind to a closer contemplation of those great natural laws, whereby even the universe itself is maintained. This wonderful little tube of mercury, by its mysterious rising and falling, conveys to you, sitting snugly by your fire, a visible indication of the mighty movement and sweep of far-off air currents, that are perhaps marking the earth and seas with devastation; or which, in the farther depths of this upper ocean, are warring with other forces, as Titonic as themselves. I have come to regard mine as a necessity. True, we might live without clocks or watches, thermometers or spectacles, kerosene lamps or gas, newspapers or books; but in this nineteenth century, willfully to neglect any of the means which the goodness of the Creator has placed in our hands for making ourselves wiser and better, and more comfortable, is a sin.

In selecting an instrument, see that the tube and cistern are of good size, and that the whole is portable, or may be easily moved. It is desirable, also, that it be provided with a *vernier*, by which variations may be read to the hundredth of an inch. I have used several different barometers, and I know of none of moderate cost that is so generally well made and reliable as the "Woodruff." This instrument is perfectly portable, has a good metalic scale and *vernier*, is tastefully gotten up, and take it all in all, I believe there is no other of a similar cost that will compare with it. I have no pecuniary interest in this or any other barometer, but desire simply to commend the best. If any of your numerous readers can recommend a better one for general use, they will convey a favor on all who are interested in this neglected topic, by naming it.

June, 1867. AN OLD CONTRIBUTOR.

For the New England Farmer.

WILL IT PAY TO BE A SLICK FARMER?

For the following notes of the discussion of this subject by the Irasburg Farmers' Club, we are indebted to Z. E. Jameson, secretary.

E. P. Church was aware that a person is subject to criticism if his theory and practice do not correspond. Still he believes it pays to be a slick farmer. The door-yards attract our attention whenever we pass a farm. Some are filled with decaying sleds, wheels, harnesses, ox-yokes, logs partly chopped and piles of chip dirt. Other yards are swept clean and a beautiful green turf covers the earth; all rubbish being either destroyed or packed away in in the wood-shed or yard.

Sometimes deep dead-furrows in the middle of fields, or high ridges about the edges are left so that the mowing-machine and horse-rake cannot work to advantage. At the second plowing, he sometimes begins in the middle and turns two first furrows into the dead furrow, and sometimes has carted the outside furrow to the middle. Where wet and dry land join there is frequently quite an abrupt descent. In plowing the dry ground, I begin at the bottom of the descent and with plow and shovel work it down so as to form a gradual slope, rather than a steep, break-neck place. It pays to cut bushes on low land, and on side of roads and fences, and our permanent road fences should be made neat and tidy. Our barn doors should be well hung and easily see cured. Tools should not be exposed to weather as the iron rusts and wood rots, and when wanted for use are ready to break. I once had a new cart made for $28, I used it 20 years and sold it for $28. Tools that are sheltered when not in use last a lifetime. Now if we keep the roadsides free from bushes and rubbish, have our fences in order, and things in order about the buildings, there will be such an attractive appearance that our property would sell for a much higher price than it would if we take the opposite course.

A. Jameson said it pays to have things in order and well cared for, but he once knew a man who he thought was too slick for profit. He would use his jack-knife in cutting the grass around stone heaps; his hay-mow was trimmed down square; his hoes were brought to the house every night and wiped dry; and he would not burn a stick of crooked wood in his fire-place.

G. B. Brewster once worked seven years for a man who was nearly blind, yet was very particular and knew how work ought to be done, and would have it done right. My ideas of slick farming I got from him. He kept 600 sheep, and his barn and sheds were well arranged for their accommodation. The rubbish from the roadsides was taken into the fields and burned. The yard back of the house was equal in neatness and order to that in front. I think it pays well to spend a few days in the year in clearing up.

N. F. Stiles thinks a man may be a thorough farmer yet not a slick one. A farmer who puts his work over the road double quick can't stop to be slick; it won't pay.

Wm. L. Jameson had not been able to do all his work as he could desire. Many things which are left undone and which he does not think will pay to hire done, gall me as much as they do any one. In a new country the people are necessarily busy getting a living, and have not time to do unprofitable work; but as the country gets older and the farmers richer, we witness an improvement. He knew many good farmers who are making money. They take care of farm tools, fences and buildings, yet they are not what are called slick farmers.

Had seen cases of negligence in the care of tools, &c., which were not consistent with good farming. Now while it will pay to be a good farmer, it may not bring in the dollars to be a slick farmer.

Mr. Church asked, is the almighty dollar the only thing we should live for? Do not comfort, beauty and cheerful appearance pay us well for slicking up? When friends come to visit us, does it not pay in enjoyment to walk with them about a slick farm. A good farmer is a slick farmer.

Mr. B. knew a man who probably wastes $500 or $1000 a year by careless management. Everything is at loose ends. At one time he had about twenty barrels of tallow. The hogs got to it and destroyed a part of it. At another time he went with friends to see a field of wheat, and found 300 or 400 sheep in it. There was nothing secure and tidy in his management, for he was always in a hurry, doing great business with constant waste and carelessness.

Z. E. J. thought that to be a slick farmer all work must be done promptly and systematically. The farmer who has not sufficient help finds it necessary to begin many jobs and defer finishing them until some future time. If many jobs are thus left, things get at loose ends rapidly. There are some things that can be postponed without serious damage; others cannot be left without loss. Only half my year's supply of wood is in the shed; the rest lays in the door-yard. We sometimes leave the hoeing, to shear sheep or to work on the roads; or haying, to cut grain. The farmer often acts as carpenter, joiner, painter, glazier, and, if handy, something may be thus saved. Will it pay to hire all this done for the sake of having it appear slick? I think if a man is in debt and trying to pay up a mortgage, slick farming will not bring money into his pocket. Slick farming improves the looks of a farm more than it increases the crops.

Wm. L. Johnson understood this question to mean, will it pay, after a man is a thoroughgoing farmer, to put on the polish? The extreme slovenly cases are not the standard of comparison.

F. S. Brown thinks it is profitable to have stumps and stones taken from the tillage land, and all useless, refuse matter and rubbish slicked up about the house and barn.

For the New England Farmer.

NEAT STOCK IMPROVEMENT.

In consequence of the agitation of the subject at our Farmers' Lyceum, the increased reading of agricultural papers, and observations at annual Fairs, the beginnings of improvement in this department are manifest in this vicinity.

Some two years ago, a pure-bred two-year old Durham bull was obtained from abroad, but there being no pure-bred cows to match with him, none but *grade* stock was the result, until a pure bred cow was brought from Massachusetts. She brought a bull calf, which was sold at five months old for $125, to be kept in the neighborhood. She recently dropped a heifer calf, which was valued at $150, but unfortunately it got drowned in a mud-puddle the first night! The owner went immediately to Massachusetts and purchased a cow and calf and a bull, being determined to give the breed a fair trial on our soil and hills.

Nearly two years ago, a man in the opposite part of the town got some Alderney calves, also from Massachusetts, and is intending to give that breed a hearing.

Another man, five years ago, obtained from the same State a heifer calf, half Alderney and half Ayershire. She proves to make a superior family cow, valued at $200.

Last season three pure bred Ayrshires—one bull and two heifers—were brought from New York and Connecticut. The bull, a yearling, served about eighty cows, during the year, —most of them, so called *natives*—with a few grade Devons and grade Durhams. Those calves that have already made their appearance give good satisfaction, and are no discredit to their sire. They are well built, of good size, and remarkably smart. As they seem to understand from birth that they are to be "raised," they take to drinking and eating *instinctively*. I have four of them; three of which drank the first time they were told to, and the other required but little coaxing with the fingers. My neighbor, across the way, is also raising four, and says he never had any calves that made so little trouble, or did so well; and he has raised several each year for a long time.

To encourage others, in other localities, to make some effort for stock improvement, I will say that the service of the bull amounted to his first cost, the first year; that he has grown quite enough to pay for his keeping, and consequently that there is yet no loss. Although I offered a present of ten dollars to any man in the neighborhood, who would get one of this breed, no one would risk it. I therefore risked it myself, though without suitable conveniences; but I do not regret it, believing now more than ever that it will prove for the public good, and a paying investment.

One thing is certain. Very little, if any *improvement* of the "natives" can be expected without considerable *effort;* and some *one* in every place must begin. Judging from my little experience, there is but small chance for pecuniary loss, even if a *tall* price is paid for the thorough-breds to start with. But rather than no beginning, I would say begin with half-breds, which will cost much less.

The above having been written several weeks ago, and not forwarded, by being mislaid, I am now able to add that several of the half-blood Ayershire bull calves that have been *fattened* attained a plumpness and weight, at

four or five weeks old, very commendatory to the breed, ranging from 150 to over 200 pounds.

There are a few *yearling* half-bloods, sired by a bull from W. Birney's herd, that are very "likely;" one man having two of them, a bull and heifer that run together last fall, and the heifer is to "come in" the fore part of August. The "Birney" bull became imbecile or inefficient very soon after he was obtained. Without any known cause, his sheath became inflamed, and after a few weeks yard and sheath grew together, so as to prevent his usefulness, and he was sold to go to Brighton for beef. Who ever knew a like case? Bos.

Randolph, Vt., June, 1867.

For the New England Farmer.

NOTES ON THE CONNECTICUT VALLEY.---No. II.

Haying---Raising Sorghum.

In securing the hay crop, the mowing machine and horse rake are in general use in this valley, and a very few tedders, as those that have been introduced soon get out of order. This is a very serious objection to all that I have as yet seen. More durable machines must be got up in order to secure their general introduction. It will never do for a farmer to depend upon any machine that is likely to fail him at the time most needed. The Buckeye mower is the favorite, although it has several competitors that seem to be gaining favor of late. The Hubbard and Monitor being the most prominent. I have been quite sanguine that important improvements would be made in mowers, and my expectations bid fair to be realized. A machine was tried late last season that appears to have distanced all rival competitors, if I can credit reports that reach me from the scene of its operations. It is invented by Mr. Perry, the town clerk of Kingston, R. I., and is to be manufactured by Ames & Co., of Boston. I will not specify its professed merits, as I have no doubt that will be faithfully attended to by those interested in its introduction.

I have not seen in all this region a hay cap in use. This was really astonishing to me, as I had been accustomed to see them in so common use in Massachusetts. For the past five or six years the expense of material has been a serious obstacle to their more general use in all parts of our country.

Sorghum has to some extent been cultivated in this vicinity. It appears to be gaining favor with those who have grown it. Some are very sanguine of success,—having substituted it for tobacco. When it gets an early start in the spring, it is comparatively secure from frost; failing of this, frost is quite sure to injure it. A sample sent me, made from frosted cane, is a very poor substitute for molasses. Its color is bad, and its flavor still worse. Another sample, from that not frozen, was very good in color and flavor. It was not, however, boiled sufficiently to give it as heavy body as most would desire. The yield has been about two hundred gallons to the acre, in some cases even three hundred—do not think it is usually so productive. The leaves are stripped from the stalk for feeding cattle; said to be good for that purpose. Mills for grinding it, and pans for evaporating the syrup are manufactured in Hartford, which are said to be the best in use.

Much experience, I think, will be necessary to enable the cultivator to determine the proper time to plant and gather this crop, and the manufacturer to make a proper use of it when it comes into his hands. I make these suggestions because I have seen sorghum syrup at the west, that in my judgment was equal to syrup of any kind I ever tasted. I cannot see any good reasons why it should not succeed here as well as there. It will grow anywhere that corn will. Sandy loam is considered the best soil for it, as it does not yield so much saccharine matter when grown on clay soils.

One-half of the syrup, or fifty cents a gallon, is the present rate for manufacturing, and is a good business while it lasts. These charges cannot of course continue if the crop is extensively produced. It readily amalgamates with both corn and broom corn. This impairs its value materially. It should not be planted near either of them. I hope soon to see our New England farmers producing their own sweetening. There is no good reason why they should not. The beet, if not the sorghum, can be raised successfully, and of superior quality to the European for sugar.

East Windsor, Ct., 1867. K. O.

THE PROPER TIME AND MODE FOR CUTTING FLOWERS.

Never cut flowers during the intense sunshine, nor keep them exposed to the sun or wind; do not collect them in large bundles, nor tie them tightly together, as this hastens their decay. Do not pull them, but cut them cleanly off the plant with a sharp knife, not with a pair of scissors. When taken indoors, place them in the shade, and reduce them to the required length of stock with a sharp knife, by which means the tubes through which they draw up the water are left open, and the water is permitted to ascend freely, whereas if the stems are bruised or lacerated, these pores are closed up. Use pure water to set them in, or pure white sand in a state of saturation, sticking the ends of the stalk in it, but not in a crowded manner. If in water alone, it ought to be changed daily, and a thin slice should be cut off the ends of the stalks at every change of water. Water about milk-warm, or containing a small quantity of camphor dissolved in spirits of wine, will often revive flowers that have begun to fade. Place a glass shade over them during the night, or indeed at all such

times as they are not purposely exhibited. Shade them from very bright sunshine, and when uncovered, set them where they may not be exposed to a draught of air. A cool temperature during summer is favorable for them, and the removal of the slightest symptoms of decay is necessary. When taken to a distance, carry them in a shallow air-tight tin case, or cover them with paper to exclude them from air and light. Charcoal saturated with water is also a good preservative for sticking them in, and the thinner they are kept the better.

TREE BORERS.

The borer is the popular name given to the *larvæ*, of several kinds of beetles; that is, bugs with wings and hard shells. The larvæ are the young of these beetles, in the form of worms, and in this period of infancy they pass most of their lives in eating, growing rapidly, and usually cast off their skins repeatedly.

Their *second* period is called the *pupa* or cocoon state, in which they sleep while Nature is preparing the wings, legs, antennæ, and other paraphernalia of the perfect beetle.

From this second period they enter upon their last or adult state, do not increase in size, and are devoted to a continuation of their kind. This period lasts only a short time, for most insects die immediately after their eggs are laid.

It is in the *larva* condition that they are *wood-eaters*, or borers. Our forests and orchards are more or less subject to their attacks, especially after the trees have passed their prime.

These borers, of one kind and another, infest apple trees, the quince, cherry, mountain ash, oaks, white ash, locust, and some others, and their depredations are often very destructive. The locust tree is preyed upon by three different kinds of borers. Splendid groups of the locust are frequently utterly ruined, and majestic oaks are half denuded by them in a single season. The borer enters a small branch at some convenient point, cutting it half off in so doing, and then passes along through its centre, or pith, towards the end of the branch. Now note the instinct of these little animals. They do not pass in towards the body of the tree, but outwardly, so that a strong puff of wind breaks the branch, which falls lightly to the ground, into which the worm goes to pass through the next transformation!

By taking up one of these broken branches and carefully following his tracks, the worm may easily be found. He certainly has improved a delightful mode of descending from the brawny arms of tall oaks to reach the ground.

The apple tree borer is the larva of the striped saperda, (*saperda bivittati*,) which is represented in the following cut.

This is the insect in its perfect or beetle state.

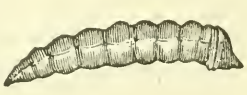
This figure shows the size of the insect. The upper part of the body is marked by two longitudinal white stripes, among others of a light brown. The face, antennæ or feelers, and under side of the body and legs are white.

This beetle comes forth from the tree in June, in the night, flying from tree to tree for food or companions, resting in the daytime among the leaves of the tree on which it feeds. In June, July, and sometimes in August, it deposits its eggs on the bark of the tree, at or near the ground.

Knowing this habit, many of these eggs may be destroyed by scraping around the base of the tree, and washing it with strong soap suds, during the last week in August.

The larvæ, or young borers, from these eggs are fleshy, round, whitish grubs, without legs or wings. They eat through the bark and remain there the first winter, marking their entrances by a little pyramid of borings, which betrays their hiding places, in which they can be easily found and destroyed. The next season they penetrate the wood, throwing out dust, or cuttings like saw-dust, by which they may be traced; generally ascending as they proceed and boring deeper into the tree. It becomes a full grown, borer as here represented.

The third season, nearly two years from its entrance, it approaches the surface, where it undergoes its final transformation, becomes a beetle and leaves the tree. This borer sometimes enters the tree several feet above the ground, and occasionally enters the limbs near the stem.



Their presence may be ascertained by their cuttings, or dust, and the hole where this has

been cast out discerned by a little practice and care. When found, insert a wire with a very small point turned up on the end, by which the invader may be drawn out and killed.

DOCTORING HORSES.

There are certain practices with horses that are sick, which are popular, certainly, but are just as certainly not only unfeeling but absolutely cruel. In the first place, the probability is that not more than one horse in ten would be sick in the whole course of his life, unless through some carelessness, some want of knowledge, or some cruelty of man. And yet, when sick, how often it is that some terrible dose is administered, such as a pint of gin or rum, a half pint of castor oil in spirits of turpentine, or a tremendous "ball of aloes," to say nothing of the potent caustics, such as bichloride of mercury, arsenic, nitrate of silver, sulphate of copper, &c., &c.

"The horse's body," it is said, "does not quickly respond to opening medicine, but the action, once elicited, is not invariably easy to command. The animal's life is frequently a prey to a potent purgative. The veterinarian knows that the different creatures vary much in their capacity of swallowing amounts of aloes; that the dose which will not move one quadruped may destroy the inhabitant of the next stall. One creature will imbibe two ounces of the drug without marked effect, another will be shaken by the action of less than half an ounce of the same preparation."

This practice is all wrong, and should never be allowed by owners of horses. There can be no doubt that many valuable animals are lost by such desperate prescriptions.

Among the first evils practiced is that of using the horse too soon. Few of them are now permitted to grow until their sinews and muscles are matured. A frequent, but light and gentle use of young horses is undoubtedly good for them; but one fatigue, or strain, may affect their whole life. Too often the impatience of gain seizes the colt and subjects him to long travel or hard labor, which brings on one of the countless diseases or lamenesses to which he is liable, and from which he never fully recovers.

Because the horse *can* endure, and *will* patiently endure, a vast amount of hard labor, neglect and even cruel treatment, only a few persons reflect upon the marvellous delicacy of his construction. If they would study this more, they would neglect, or over-drive, or overload the animals less.

Half or more of all our horses are mean in spirit and form. They come from old and diseased animals to begin with; animals loaded with quarter-cracks, spavin, bots, rheumatism, ring-bone, founder, grease, string-halt, and forty other things, and with these they possess some other faults, which makes them anything but safe and agreeable,—such as stumbling, running, and shying, though the latter may be occasioned by the unnecessary and senseless use of blinders. It is time a reformation were commenced.

From Chambers' Journal.

SUMMER IDLENESS.

Under a "roof of pine,"
To hear the ringdove brood,
With the sorrow of long past,
Thrilling the listening wood;
Deep 'mid the clustering firs,
Where the nightingale sings all day,
To hide in the darkness sweet,
Where the sunbeam finds no way.

To ramble from field to field,
Where the poppy is all on flame,
All but the little black coal
At its core, that's still the same;
And where the "speedwell" blue
Cheers with its two kind words,
And the wild rose burns with a blush
At the flattery of the birds.

To bask on a grassy cliff,
Lazily watching the sail,
The blue plains of the deeper sea,
And the shallows emerald pale;
The breezes' rippling track,
And the sea-birds flickering white
Athwart the rosy cloud,
And under the golden light.

In the haycock sweet and dry,
To lazily nestle down,
When half the field is grey and shorn,
And half the field waves brown;
'Mid the clumps of purple thyme,
When the evening sky is red,
To lie and rest on the flowers
One's Epicurean head.

Or, better, amid the corn,
To turn on one's lazy back,
And see the lark upborn
Over the drifting wrack;
To hear the field-mouse run
To its nest in the swinging stalk;
And see the timorous hare
Limp over the hedge-side walk.

Such are the summer joys
That Epicureans love;
Men with no morrow to heed,
Heeding no cloud above:
Grasshopper-men, that sing
Their little summer through,
And when the winter comes,
Hide from the frost and dew.

Happy the man whose heart
Is granite against Time's frost,
Whose summer of calm content
In autumn 's never lost;
Who, when care comes with clouds
That gather from east and west,
Has still a changeless heart,
And sunshine in his breast.

LETTER FROM THE FARM.

Concord, July 3, 1867.

Gents:—In a hurried journey through a portion of some twenty towns in this State and New Hampshire, I have been greatly gratified with the appearance of the crops. As I travelled by horse-power, I had opportunity to observe, make calls and inquiries as I went along; and, by the way, this is the manner in which farmers should travel, unless abroad on mere business matters. A life that gains little or nothing *by observation*, is a monotonous and dull one. I scarcely ever travel a day among farmers, or pass over a well conducted farm without seeing some example which I intend to copy, or hearing some opinion or suggestion which I mean to adopt. And now our homestead bears evidence on nearly every part of it, of the opinions and practices of *other* minds.

The bountiful rains with which we have been favored, seem at last to have overcome the blighting effects of a *three years' drought*, and to have enriched and stimulated the power of the soil into new action. Everywhere it has "blossomed as a rose." The delightful fragrance of wild grape and clover blossoms make the air redolent with sweets. It is the greatest *clover year* perhaps ever known. The pastures are delightfully green and inviting, so that brimming pails and sweet butter are no longer myths. The "cattle upon a thousand hills" rejoice, and it was not difficult to imagine that the hills themselves might clap their hands in joy.

I had just been reading a book describing the customs and conditions of life in Asia Minor and Syria. Its descriptions were fresh in my recollection, and laid out before me as a map, as I journeyed along; and the contrasts between that life and this which I heard, felt and saw before me, filled my mind with the most profound gratitude. In the midst of *my* glowing world, I contrasted our condition with theirs,—our laws, general education, the blessings flowing from science and art, and their wonderful march onward, the comfort and elegance of our dwellings, the intelligence and refinement of women, the toleration of opinion in politics and religion, prevalence of books, and all that dignifies and ennobles our natures.

There is, indeed, a great gulf between our condition and theirs, which would require centuries of progress to level up. And yet, they have a land of unsurpassed beauty and fertility, and had the "gospel preached unto them" ages before we did. No substantial progress can be secured so long as women are considered inferior to man and treated as such,—so long as the harem and polygamy exist. With these contrasts in my mind, was it strange that the birds and the brooks sang cheerfully to my ear, that the air was fragrant with the perfume of flowers, and that our rough New England valleys and hills were easily transformed into a paradise?

With the exception of the apple and pear, all the crops appear well. These seem to have disappeared as by magic. The trees blossomed well, the fruit set as usual, but soon fell off, so that there is comparatively little left of either of these fine fruits. Still, there are some left, and being few they will be likely to be large, and I hope fair.

Peach trees are well filled. Even those with only here and there a straggling living branch, with a few sickly looking leaves, have a few fruit peaches on them. Thanks for the promise once more of a crop of this delicious and wholesome fruit.

Corn, potatoes, rye, barley and oats, look finely. I do not recollect of seeing a field of wheat.

Strawberries are more abundant, I believe, than ever before. I regaled myself on a dish of perfectly-ripened wild ones, which brought back childhood days vividly.

Monday morning, July 1st, the haymakers were abroad early. The merry click of the mowing machine, the graceful and athletic swing of the hand mower, and the white shirts that dotted the fields, were attractive and pleasant. On fair land, I found the grass everywhere good — more than an average crop I should think. And yet, with these fair prospects, farmers told me that good hay will be worth $20 per ton in the barn, as soon as it is placed there, where the whole community is made up of farmers! They say there is no *old* hay left—scarcely five tons in a town.

The Use of Hay Caps.

But for the high price of cotton cloth, hay caps would be in common use. The opinion now is quite general that their use is highly economical. I believe that if we knew the weather would be fair, it would be economy

to cover hay with caps. Experience and careful observation for twenty years has established this belief in my mind. I have often made experiments on the same lot of grass, covering a portion and leaving a portion uncovered. This has been done when the weather has continued fair and when showers and storms have succeeded; in the latter cases, no one doubts, I believe, the utility and the economy of their use. But in fair weather, many persons are of the opinion that they are of little or no benefit.

If the cap were employed merely to keep the hay from getting wet, this reasoning would be correct; but this is only a small part of the good effect which it performs. It not only keeps off the dews and rain water, but prevents the evaporation of the aroma of the hay while in cock; keeping it moist with its own juices, and inducing a *sweating process*, which improves its quality by keeping the woody fibre softer and more palatable and nutritious. It undergoes a *cooking* process, which cures the hay so that it requires but very little exposure to the sun afterwards.

Cut Grass Early.

In connection with this, I desire to suggest again the cutting of grass *early*. In the blades and stems of the young grasses there is much sugar and starch, which as they grow up are gradually changed into woody fibre. The riper the stem of the plant becomes the less sugar and starch it contains. These are what we ought to retain—the sugar, starch, gum and oil; and by cutting the grass soon after it has attained its greatest height, a large quantity, as well as a better quality of hay, will be obtained.

All grass that has been partially wilted, should be placed in cock over night. I have just been spreading some that was left in winrow, and found that on the surface slightly *bleached*. Better cock it, if it takes until after sundown.

But the haymakers want me, so I close.

Truly yours, SIMON BROWN.

MESSRS. R. P. EATON & Co., Boston.

A LARGE DAIRY.

A gentleman by the name of Ross Winans owns 760 acres of land near Baltimore. He keeps cows for milk in city stables, and feeds them the year round on hay, with some bran or shorts, Indian corn, &c. The editor of the *Country Gentleman* who recently visited his establishment says, that he sold milk in one year, at 30 cents per gallon, to the amount of $37,630.71; cows and calves $11,986.08—almost fifty thousand dollars! He mows about 650 acres, filling forty-five barns, rated at forty tons each,—some eighteen hundred tons,—averaging over two and a half tons per acre! His city stables contain stalls for 220 cows, and he actually keeps 300 head of cattle and 30 horses. From a somewhat imperfect record, it is estimated that his cows make an average yearly yield of 2637 quarts of milk per cow. Sixteen cows which dropped their calves at intervals during January and February averaged over 16 quarts per day, up to March 13th. Such crops of hay are evidence of liberal manuring, and such yields of milk of good stock and of judicious management.

YANKEE PLOWS AND PLOWMEN.—The Paris correspondent of the *Rural New Yorker* compounds the following bitter pill for our "crack" plowmen and plowmakers, and advises them to swallow it like men, for it will do them a vast deal of good. After describing the trial of mowing machines on the Emperor's farm near St. Cloud, in which the Americans swept every thing clean, he alludes to the plowing match, in which the English had every thing their own way. He says:—

> We cannot compete with them either in plows, teams or plowmen—all necessary elements in a plowing match. This will be perfectly understood and acknowledged by all who have seen England and taken the least notice of plowing there, but will not be by those who have not. I do not contend that the time and force expended by the English plowman is any more remunerative than with us, but when you come to the doing of a nice job, such as is expected at a plowing match, we cannot come up to their ordinary work.

ROOT PRUNING OF PEAR TREES.—The following directions for summer root pruning, to induce fruitfulness, are given by the New York *Horticulturist*: "As soon as the terminal buds of this season's growth have formed or are forming, dig a trench around the tree, two thirds in circumference the diameter of the branches. Dig down deep, so deep that you can, by opening a trench toward the body of the tree, get in a position to cut the tap root off about eighteen inches under ground, then with a sharp knife trim each end of the roots

around the inner side of the trench, and again fill in the soil. Make sure that no strong lateral roots or duplicate tap roots are left uncut."

For the New England Farmer.

RAISING CORN IN CANADA.

This is rather a cold country for corn, and it is not expected that we can raise such large crops as can be raised further south or west. But I believe that Indian corn, properly cared for, can be made very remunerative even in this cold climate.

Take green sward and plow in the fall, the earlier the better. I have tried two ways of manuring. First, put on liberally of good barn yard manure before plowing; and, second, applying the manure after plowing. I do not know which is best for the corn; but the land will produce grass longer when manured after the first mentioned manner.

I never plow in the spring before planting; I had rather that the sod would lay and decompose under the corn, as I believe it helps its growth, but do not spare the harrow. When the land is in good tilth, furrow with a plow about three and one-half feet apart, into which manure is placed at suitable distances for the hills and immediately covered with a hoe, so as to keep the moisture from evaporating This manure for the hills is prepared in the following manner. My hog pen is so situated that I can throw all the manure from my horse barn and from the privy directly into the yard of the hog pen. Besides this, all the chamber slops are thrown upon this manure. In the fall, after killing the fat hogs, the manure is thrown out by the side of the yard. Early in April what is made during the winter by the store hogs, is thrown out on to the fall made, when the heap will immediately commence heating. In about three weeks begin at one side of this heap with fork and shovel, and turn it all over, mixing that made in the fall thoroughly with that made in the winter. From this compost heap, put about eight or ten cart loads, of thirty to thirty-five bushels to the load, to each acre. I have tried various kinds of manure, but find the above the best. I believe just as good as all hog manure.

If the manure is allowed to dry up after being put in the hill, the corn will not come up so readily. I put my seed corn into warm water the night before planting. In the morning, dry the corn so that it will not stick together by putting plaster or wood ashes to it. This causes the seed to come up much quicker than it would if planted dry, as it gives the germ a start.

I have planted corn on ground prepared as above for a good many years, and seldom fail of a good crop. In 1865 I had one and three fourths acres from which I gathered two hundred and fifty bushels of ears good sound corn. Not so large a crop as we frequently read of; but considering the climate and the distance north, I think it a good crop, at least remunerative, especially as I also raised about six bushels of beans among the corn, and a large quantity of pumpkins on the same land. Now the fodder when well harvested I believe will pay for harvesting the crop of corn. When the corn is pretty well advanced in ripening, or immediately after the first frost, or before a storm of rain, my method is to cut it all up close to the ground, and then set it up in stooks, tying a band of straw around the tops after bringing them together. This will keep the storms from hurting it. Let it stand two or three weeks, then pick the ears from the stalks and husk them immediately, or at your leisure, and bind up the stalks and house them in places where they will not hurt, and my word for it you will have as fine fodder as you can wish. It will make cows give as much milk as the best of English hay; at least, this is my experience. It always pains me to see corn fodder left in the field to waste, as many farmers leave it. I do not know as we ought to call such men farmers.

Some farmers are always complaining that they cannot keep the crows from pulling their corn after it comes up. I used to be troubled somewhat in that way; but for several years I have not had one stalk pulled up. I take cotton twine or woolen yarn, and run it clear round my piece, fixing it to stakes five or six feet from the ground. I have so much faith in the above remedy, that if farmers would do it before their corn is up, I should not be afraid to say that I would give them twenty-five cents for every spear the crows pull up. I think it an excellent plan to put, after the first hoeing, about one-half pint of unleached wood ashes among the spears of corn in each hill. Be sure to hoe so as not to let weeds have the supremacy, as they take the nourishment that should support the corn. HIRAM FRENCH.

Eaton, C. E., 1867.

For the New England Farmer.

NOTES ON THE CONNECTICUT VALLEY.---No. III.

The Old Orchards.

A feeling of sadness comes over me as I observe the unmistakable evidences on every hand of the decay of the old fruit orchards, and the absence of well directed efforts in planting and fostering new ones to supply their place. Within my recollection Hartford exported large quantities of apples and cider. Much of its cider found its way to a southern city where I resided. Now apples are not only required from other States to supply the cities, but many are required for the villages and farming communities.

Neglected and abused, as most orchards are, it is not surprising that trees do not flourish and that fruit fails. Trees require more care-

ful usuge now than when the country was comparatively new. They are more exposed to the force of winds, and ravages of insects at the present time than then. Few appear to regard these changes as being necessary to be taken into account when they plant out their fruit trees. They dig a hole and put them into it, and leave them to struggle for their existence under an accumulation of difficulties the most discouraging. They may manage to live for a few years, if the cattle or swine are not too severe, and then give up and die. Others are cared for after a fashion, until they have attained quite a good size, say a ten years' growth, then left to shirk for themselves. A week or two since I saw one of my neighbors trimming trees with a common chopping axe,—good thrifty trees, too, that with proper care might not only be made an ornament to his place but a source of profit.

Fruit has become so much a necessity in every family that prices are and will be remunerative. Your articles on the care of trees, published in the FARMER, are to me the most valuable of any that appear in the paper. What will New England homes be without orchards? To the boy that has been reared beneath their shelter and shade, and partaken of their fruit, how endeared is every tree. Some of them in particular are indelibly engraved on his affections. He longs to re-visit them, even when years of separation have intervened. If in this respect he should be gratified, how joyful the re-union! How grateful the reminiscences! How luscious the fruit! This is not all romance, but with many an one, a simple history, a living reality.

I must plead for the orchards that are still left us and urge the cultivation of new ones. They are a necessity for our well being. Our homes, if in the country, require them. They cannot, ought not, to be regarded as homes unless we have or mean to have an orchard of good fruit. Plant and wisely care for an orchard, and you are thrice blessed in the satisfaction you will find in it, and your children's children will arise to call you blessed. K. O.

East Windsor, Ct., 1867.

NEW JERSEY LANDS.

A correspondent of the *Country Gentleman* says that a gentleman of good business capacity and of large experience, recently visited one of the new settlements with a view to purchase, should he find the facilities for a home there equal to the representations of committees and others, who have advertised those lands. He reports a large and restless population, without much visible means of living, and the largest portion of them anxious to sell. The lands cost some $25 an acre for field, and several times that sum in the village. Every acre is covered with scrubs and bushes, subjecting the proprietor to as much as the original cost to clear and plow it. After this, the stumps must be grubbed or pulled, to furnish clear cultivation. The soil appears to be sandy loam, and, as there is no manure at hand—nothing to feed an animal of any kind—the cultivator first casts about him to ascertain where he shall find fertilizing matter for his crops. The principal reliance is on the marl deposits of other counties. Every acre costs the settler at least fifty dollars before he realizes a crop, and he must wait for grass to grow before he can keep a horse or cow. Until he can keep stock and manufacture manure, he must buy, so that for two years, at least, it is all outlay and no income.

LITTLE FALLS FARMERS' CLUB.

The farmers of this romantic valley have kept up semi-monthly meetings for some ten years past. Their discussions of topics relating to the farm and garden, particularly to dairying, which is a leading pursuit of the farmers of Herkimer County, have been ably reported by Mr. X. A. Willard and others, and probably no farmers' club in the country has sent out as much valuable, practical information as has this association. We find the following notice of the manner of conducting its discussions, which it will be seen is very simple, from an article in the *Utica Herald*, conducted by Mr. Willard:—

Near the close of every meeting, a subject is chosen for the next meeting, and some person or persons appointed to open the discussion. The opening speeches are made in the way most agreeable to the speakers. Either by written essays, or extemporaneously. After the opening speeches, members carry on the discussion in a conversational way—asking questions or giving their experience without any attempt at speech making. All that is sought to be obtained are the facts. Generally, members keep their seats, and talk in a familiar way, precisely as they would if meeting friends on the street or at their own homes. Under this system, it has been found that much more knowledge is obtained than would be obtained if speakers were required to rise and deliver their experience, &c., in a set speech, since many who are willing to talk and answer questions could not be prevailed upon to rise and make a speech.

☞ At a factory in Breslau, pine-tree wool is now spun and woven into a kind of flannel, which is largely used as blankets in hospitals, barracks and prisons, in that city and in Vienna with manifest advantage, for pine wood drives away all disagreeable and noxious insects from the localities in which it is used. It can be used as stuffing for chairs, sofas and mattresses in the same way as horse hair.

THE COMMON MILK WEED---Asclepias Cornuti.

A fine patch of this plant grew in the highway just below "our house" when we were boys. We remember of playing with its flowers, its freely-flowing milk, its abundant pods, and its downy seeds, which floated, balloon-like, in the air, as a breath of wind or a puff from the children's lungs sent them afloat—sowers going forth to sow seed. Having been told that nothing was made in vain, we used to wonder what all its milk and all its silk was good for. We believe that the latter was sometimes used as a substitute for feathers in beds, and that the children thought the milk would cure, or cause warts,—we have forgotten which. The books, however, say it is of little economical value.

Besides the name given above, the great botanist Linnæus called it *Asclepias Syriaca*, probably supposing it to be a Syrian plant; but Dr. Darlington says it is exclusively an American species. It is also called Silkweed, on account of the beautiful silky hairs of the seeds, which bear the latter to a long distance, and thus sometimes scatter it over extensive districts. When this plant is wounded, it emits an abundance of thick, milky juice, resembling in both taste and color the juice of the common garden lettuce. Indeed, the milkweed is by some called *Wild Lettuce*, we suppose on account of the resemblance of the juices in the two plants.

The milkweed is not specially obnoxious to the farmer, and is not very difficult to exterminate, unless it has for a long time been allowed to occupy the ground, and get permanently established. It does not take root like the chickory, where it requires two men to pull up a single plant.

In the engraving, the small figure at the right represents a single flower, and that at the left, the seed-bearing pods reduced in size.

For the New England Farmer.

FARM LABORERS.

Change is characteristic of the times in which we live. No part or department of farming is exempt from its transforming influence. Some of these changes are hailed with delight, as evident progressions; but in the older Northern States, there has been a change in the character of its labor, which has received anything but a cordial assent. Formerly in New England farm help was composed exclusively of her native sons and daughters. Of late our native born young men and women have sought their homes and fortunes in the new States, or in other pursuits in their own States, until not only has the surplus been absorbed, but children leave their ancestral homes and their aged and dependent parents to be cared for, if cared for at all, by hirelings.

The rapid introduction of mechanical appliances, and new and improved methods of husbandry have increased the demand for active, intelligent and skilful labor. While the former supply has been thus cut off, another class of laborers has come from other sources. How well the latter meet the requirements of farmers need not be stated here. It is sufficient to say that the vexations and discouragements experienced with modern help have been the turning point in the sale of many a farm, and in other cases have caused operations to be contracted into the narrowest limit possible.

While some farmers are thus giving up in despair, and others waste time in regretting over the past, or in desponding over the present or future, it is well to inquire if the best mode of dealing with this new material has yet been adopted. It is evident that the system practicable with the former class is not in all respects advisable for the present class. So radical a change in the character of the laborer must be met with a corresponding change in the manner of dealing with him.

Under the present plan of boarding their hands, farmers are dependent upon the young and inexperienced, or on older men of thriftless or indifferent habits, who, having no particular attachments to any place, are fond of change, and float about for novelty and excitement, if they find no other pretext for leaving an employer. These are so unstable that it is difficult to make them fulfil a contract for a single season. The old apprentice system is an institution of the past, and there is no restraining this roving disposition of young help. Provided there was, by the time that young men become thoroughly useful they naturally desire to establish a home of their own. This cannot be done in their employer's kitchen. The only alternative for them is to leave him and go where they can.

Such a system has inherent defects, and is not adapted to the exigencies of the times. Something is needed that will induce the young men to remain a few years longer, and give a more permanent character to labor. That want will be supplied when pleasant and comfortable tenements, one or more according to the size of the farm, are provided for the workmen upon the farm. Then the services of married men can be secured; those having maturity of character and the requisite experience for profitable hands. Such men, having a family and home upon the farm, will naturally take a deeper interest in their employer's business; will be less inclined to rove about and quit a good place on the slightest variance. It is not enough to employ married men who have families miles away, or in a neighboring village within walking distance, and the men board at home. For with their families in one place and their work in another, their attention is likely to be divided, and often when most needed they are not to be found.

The families of these men will increase the supply of female help for the farm and neighborhood; both kinds of which are scarce in most rural districts. The wives of the laborers, if foreigners, will gladly accept of extra jobs at the farm-house; and those farmers who know so well how to turn the time of their own children to profit will see that these children will be cheap help for the busy seasons. Well trained lads are far more profitable upon many kinds of work than men of twice their strength. With plenty of such help at command there would be no excuse for weedy fields; and the cultivation of small fruits and of fruit generally, with root crops, &c., would be practicable where they are now considered unprofitable, with only heavy, clumsy men to do the work. The multiplication of machinery upon the farm favors the employment of young, light and active help. The great want of farmers is permanent cheap help to diminish the cost of production and increase the profits of the farm, and it is this occasional help which can be had at call for specified work which is cheapest and best. Is there any way of obtaining it except by a resident population?

The expense of this plan need deter none from adopting it. A few hundred dollars, at present prices, will erect tasteful and comfortable tenements of four or five rooms, which with a small garden and some trees can be made an attractive home—far better than most of the present class of hands ever enjoyed in their native lands or can command in crowded cities or manufacturing villages. Often a large portion of the materials and labor for construction can be furnished by the farm. Whatever the cost, a fair percentage could be deducted from wages for rent.

I am confident that farmers' wives and daughters will not object to a plan which at once relieves them of so much hard and disagreeable work. The complaints that are so often heard over their hard lot are not without foundation. Farmer's kitchens under present arrangements are noted places for unceasing toil. Young girls have an intuitive dread of them; and not a few older ones, when they have learned how comparatively easy people in cities and villages live, prefer to jog along solitary and alone, rather than assume the duties of a farmer's wife. The wives of no other class of men, with the same capital in their business, perform so much downright drudgery. Not long ago the apprentices and most of the help of mechanics and small traders lived in the families of their employers; but through changes in our social condition, that custom no longer exists, and surely farmer's wives have enough to do without keeping boarders, and may plead the same good reasons to be relieved of this heavy burden.

But some may say, we board our hands to maintain the strict economy which farming compels us to practice. To make keeping boarders profitable, is acknowledged by the experienced to be a difficult business. Without the closest

calculation, constant personal oversight and unremitting hard work there is no chance of success. Even with these qualifications, the profits depend upon the number of boarders—one, two or three are often more trouble and expense than profit. How can farmers talk of economy when the circumstances of their families are so often against taking boarders. The fact that they do board the hands often necessitates keeping help within the house, which by consumption and waste increases expenses beyond what most men are aware. Where this is done, if accurate accounts are kept and compared with those when the family are alone, boarding the hands may prove an expensive arrangement. But allow the situation of the farmer's family to be favorable to boarding the hands, all the profit that can arise must be from washing, mending and scrubbing for them; for, if the men boarded themselves, whatever of the farm produce they needed could be charged to them, and farmers would be in the same position as if they lived in town and bought everything. If our wives and daughters must always do this in order to swell the yearly income, it must be admitted farming is a poor business, and success depends fully as much upon the wife as the husband. Experience with both plans has demonstrated that the farmer's family can live cheaper and more happily by themselves, and the laborer cheaper and more contentedly with his own family. Such is human nature. The laborer will be perfectly satisfied at his own table with what would excite no little fault-finding and grumbling, if provided for him by his employer; and it accords with the spirit of the times that every man should sit at his own table and cut and spread his own bread and butter.

Another objection may be raised, that married men must necessarily receive higher wages than single men, and the question may also be asked what shall those of us do who employ help only two-thirds of the year? How is this among the trades? Is not the same rule that governs them applicable to farm hands? A shoemaker with a large family to support makes shoes at the same rate as a stripling, provided he has no superior skill, nor does a married carpenter or machinist receive higher wages than a single man on account of his family. Ability and experience regulate wages. Farmers must remember that in all occupations which can be pursued only during warm weather the highest wages are paid, for something must be laid by for idle days. Steady work and a permanent home are matters of prime importance to a married man, and are, in fact, a part of his wages.

Farmers who keep help only a part of the year are usually behind time; their work drives them, and they are always in a hurry: they cannot think of leaving home while the crops are growing and while employing help. After the hands are discharged in the fall, the daily routine confines them closely to the farm, and year after year passes without their leaving for more than a few hours at a time. Not unfrequently, too, the precious school time of their sons, limited to one short term, is infringed upon by winter work. Now the wages of a man for the whole year exceeds the wages of a man for eight or nine months only by a small sum, while the relief of a man kept the year round would bring to the proprietor by leaving him free to go and come at pleasure; the benefit to the children to have their school time without interruption, and the amount of work which could be done in early spring and late fall, to say nothing of what can be done in winter towards forward permanent improvements and in preparing for the busy season, repays the additional increase of wages.

The quality of farm laborers may be further improved by paying experienced hands more and inexperienced ones less. It is possible that with the shovel and hoe, both may do the same amount of work, but in feeding stock of twenty or thirty head, an ignorant hand may easily waste fifty cents worth of fodder per day, and his employer not know it at the time; and in driving a team, a hand that worries his horses or oxen, and is always meeting with accidents, is dear help at any price. Thus throughout the more important work of the farm, skilful help is cheapest; and yet how few are willing to make a difference of a few dollars per month between an experienced workman and a blundering, ignorant, green hand. The art of farming is not a simple thing that can be learned at sight or in one year; but like any mechanical trade it requires time. All the regulations, and gradations in wages made in the trades should be observed with farm laborers. It will stimulate them to qualify themselves as thorough workmen. But when a man of ten years' experience sees another of only a few months', receive nearly the same pay, where is the incentive to perfect himself in his work, or do any better than the second.

The idea so prevalent among farmers that they must be always in the field with their men to lead them off; to do all the important parts themselves; in fact, to work harder than any hired man, besides having all the care, and the moment one cannot do all this, he is obliged to sell, should be corrected. Such a state of affairs shows plainly that something is wrong in their system of dealing with help. The remedy proposed is the one which provides cheap and permanent help for the English farmer. In and around large towns men are readily found capable of taking charge of gardens, green-houses, stables and teams, and what is there on a farm that they need to dislike or cannot learn to do. It is plain, I think, that whenever farmers shall adopt measures, which will give to their employees the same relative advantages as are enjoyed by those around them, they will command as permanent,

cheap, faithful and competent help for their work as will be found in any occupation.

Lawrence, Mass., July, 1864. N. S. T.

The Sheared Sheep.—You have been shearing. Do you intend to turn the meek and amiable animals, which have just been stripped 'stark-naked' for your benefit, adrift, to sleep on the *cold ground*, and take the storms as they come? You have had abundant evidence that sheep have thick coats these days, and when you shear them it is like wearing an over-coat, under-coat, shirt and wrapper, and stripping them all off and going naked.

You would expect to die if you did it, and you ought to; and that is about what those deserve who shear their sheep at their own convenience, and let them take the rains and the winds, and the frosts as they come. In this way, multitudes of sheep get coughs, consumptions and premature death, and are reported to die of grub in the head, &c. Don't be so greedy but what you can leave a good half-inch of wool on the sheep when you shear; you will get it all in the end; and, futhermore, shelter your sheep for at least three weeks after shearing, every rain and every night that is not particularly warm.—*Hugh T. Brooks, Wyoming Co., N. Y., at a Shearing Festival.*

PARIS TRIAL OF MOWING MACHINES.

The trial of Mowing Machines at Paris opened on Thursday, the 23d of May. The place chosen for the trial by the Imperial Commission was upon the farm of the Emperor, at Feuilleuse, situated about one and a half miles from St. Cloud, the site of the summer palace of the present Emperor. The field selected for this important work was one not calculated to please the contestants. The ground, though for the most part level enough, terminated with a gradual elevation at the farther end. It was "seeded down" last year to a mixture of Alfalfa or California clover, the common red clover, and a slight quantity of red top—the greater proportion of the first named. No real sward had been formed.

The surface was exceedingly rough, no roller having been used upon it, and there were large numbers of small, loose stones scattered over it. Besides, upon the rising ground "mole hills" were plenty, and, as every farmer knows, not to be avoided in using the mowing machine. The clovers were "crinkled" and interwoven, though of themselves, under ordinary circumstances, not difficult to cut. Add to this, that the ground had been soaked by almost constant rains for several days and that a severe wind, accompanied by a drifting rain, occurred during the trial, and the reader will understand that the test was not a light one.

The field had been staked off into lots of equal dimensions, each containing ⅔ of a hectare or about 1.65 acres of parallelogram form, though some of them differing in length. The scythe had been used in dividing the lots from each other and forming a path for the first "through" of the machines. The assignment of lots was made by drawing numbers in the usual manner. In accordance with an order from the jury, the machines with teams attached, were arranged in front of the lots at half past eleven o'clock. The following is a list of the machines in competiton, in the order in which they stood:

No. 1—Kearsley Mower, made by H. & G. Kearsley, Ripon, England. 2 wheel; length of cut 4 feet.
No. 2—Peltier, Jr., Paris, France. 2 wheel; length of cut 3 feet 6 inches; one horse.
No. 3—Anglo-American, made by James Howard, Bedford, England. All iron; 2 wheel; length of cut 4 feet 6 inches.
No. 4—Made by A. C. Bamlitt, Yorkshire, England. 2 wheel; cut 4 feet 6 inches.
No. 5—Made by Samuelson, Banbury, England. Iron frame: 2 wheel; 4 feet cut.
No. 6—Wood Machine, made by Walter A. Wood, Hoosick Falls, N. Y. 2 wheel; cut 4 ft. 3 in
No. 7—Made by Euler & Girand, Lyons, France. Cut 3 feet 6 inches.
No. 8—Lancashire Combined, made by Pixley & Sims, Lancashire, Eng. Cut 4 ft. 6 in.
No. 9—Clipper, made by Allen & Son, N. Y. One horse; (cut not ascertained.)
No. 10—Did not appear upon the field for some unknown reason.
No. 11—Machine Morgan, Seymour & Morgan Patent, made by Durand, Paris. Cimbined, used reel; cut not ascertained.
No. 12—Perry Mower, Ames Plow Company, Worcester, Mass., manufacturers. Cut 3 ft. 9 in. Exhibited by John G. Perry, the inventor.
No. 13—A Wood Machine, made in Paris. Cut 4 ft.
No. 14—McCormick, Chicago, Illinois. Cut 4 ft.
No. 15—Buckeye, Jr., made at Berwick-upon-Tweed, Scotland. Cut 4 ft.
No. 16—Wood Combined Machine, Hoosick Falls, N. Y.
No. 17—A French Machine, name and width of cut unascertained.
No. 18—Wood Machine from Canada West.
No. 19—Made by Noel, Paris. Iron frame; cut 4 feet 3 inches.

At 12 o'clock 20 minutes, the machines, from 1 to 7 inclusive, were ordered to start. It was also directed that but one man should accompany each machine, but this was not insisted upon, and the owner or agent was permitted to follow if he chose. When stopped from ordinary causes, such as clogging with grass, or foul sickle bar, the driver was allowed to proceed again as quickly as possible, but if stopped on account of breakage of any of the parts, no machine was allowed to proceed until ordered to do so by a juryman.

The contest, especially at the opening, was an exciting one, alike to owners, operators and spectators. Here were the chosen implements of the world for this class of work. It was nation against nation, and machine against machine, for the highest honor that could be awarded—the championship of the world. He who entered the list unprepared, or with an inferior implement, well knew that his chance was not worth the trouble of competing. The French machine No. 7, failed in the first rod and was taken from the field. One after another, Nos. 1, 2, and 4 came to a

halt. As yet No. 6 (the Wood) kept on its way, sending back its rapid, musical "click, click, click." Its team worked admirably; the driver—a Yankee boy just out of his "teens"—evidently knew his business to perfection. At last however, a mole hill on the last half of the first swath caused this also to stop, for cleaning. One after another the others toiled on, stopping sometimes from an ill broken team, clogging with the wet grass, (for a shower had set in,) or from the more serious obstructions met with in the mole hills. The Wood and Howard machines approached the farther end quite closely together, the former having stopped but once, finally coming out ahead, in eleven minutes from the time of starting. The Howard halted near the end, while the Wood proceeded on its return trip in good style, reaching "home" with two short stoppages and before any other had completed a swath. The round trip was made in 20 minutes. A second round was made in 14 minutes, with three slight halts. At this time the Howard was in its first return swath, and No. 4, the Bamlitt, had completed its first, with No. 2 nearly out and No. 5 about half way across. The Howard completed its first round trip in 43 minutes, at which time the Wood had accomplished four rounds, the third being made in 13 minutes, and the last in still less time. With the exception of the Wood and Howard it was very evident no satisfactory results could be expected from the machines in this division The others were floundering along at various distances, some on the first and others on their second swaths. Finally the Howard seemed to come to a "dead halt;" the Wood, occasionally making stops to clean its sickle bar, kept steadily on its way.

At 1 o'clock 15 minutes, the second division, consisting of machines from 8 to 14 inclusive, was ordered to advance, the jury leaving the first division to itself for the time. These machines moved toward the middle of the field with more uniformity than the first, yet several of them were soon seen to halt. Each stopped at the rough ground at the farther end; the Perry and McCormick however, being very soon upon the move. There was but a trifle of difference in the time at which these two machines completed the first swath. The Seymour & Morgan was next to them and the Allen (one horse) the fourth in the list. The Perry started first upon the home stretch. (It should here be stated that the lots on which the last three machines of this division were operated were about ¼ longer than those of the first division.) The McCormick passed the Perry in the return, completing its first round in 17 minutes. It started back, carrying the colors of its division. The Perry, very soon out, met with an accident in turning at the end. The horses attached to this machine were unused to the work, mettlesome and unsteady. The driver, excited, could not manage them well in the crowd that stood at the starting point. He failed to raise the cutter bar, and the dividing board or "track clearer" catching in a deep rut, was broken asunder at the point where attached to the bar. The breakage was without remedy, and the jurymen present at the time, allowed the machine to proceed upon its work as it best might. The inventor evidently feared it could not do its usual work, but ordered it on. It completed its second round in advance of all the others of its division—the two rounds occupying but 20 minutes. The last swath was cut the entire length without a stop, a feat accomplished by no other machine during the day. The McCormick, during this time, was working well, and the Seymour & Morgan evidently third in this division contest. The little Clipper kept on its way pretty well, but cut high, the knives evidently being raised for fear of breakage.

Turning our attention again to the first division, we find about the same relative work accomplished as at the time we left them, with the exception that the Howard, meeting with frequent obstructions it had not the power to overcome, had fallen farther behind the Wood. We see also that the latter is about completing its lot, and is a great centre of attraction. At precisely 1 o'clock 54 minutes, the last clip was taken, and your humble correspondent involuntarily grasped the operator by the hand and shouted for America.

At this juncture all the other machines of this division were ordered from the field, the committee seemingly satisfied with what they had seen. The wind and rain now became more severe, and the Perry mower, unable to clear its break, failed to operate satisfactorily and was withdrawn by its owner upon being assured that a new trial, with a new machine, was granted him the next day, the jury very justly considering the breaking no fault of the invention. The McCormick kept well up to its work, making quite satisfactory progress. The others of the second division were working rather indifferently.

At two o'clock seventeen minutes, the 3d division—the balance of the machines—was ordered to work. Owing to the storm, or some other cause best known to the jury, they were kept at work but a very few minutes—none of them showing execution superior to that already done, and the best of them being of the same manufacture as already tried. With these, all but the McCormick were ordered to stop work. The last mentioned kept on, finishing its lot at 3 o'clock 50 minutes, being 2 hours and 35 minutes at work.

Thus ended the first day's trial of mowers at the Grand Exhibition, with America as the champion among nations, and the Wood, McCormick and Perry, at the head of the American machines here represented.

Further trial was postponed till the trial of reapers, some time in July.

Since writing the above I have information that the jury has concluded to throw out all but eight of the machines in the further tests that are to take place. The following are the names of the machines, placed in the order of performance at this stage of the contest:

No. 1.—The Wood Machine.
No. 2.—The McCormick Machine.
No. 3.—The Perry Machine.
No. 4.—The Howard Machine.
No. 5 ——.
No. 6.—The Kearsley.
No. 7.—The Peltier.
No. 8.—The Buckeye, Jr.

Now as it is not at all likely that more than three prominent medals, say one gold medal and two silver ones, will be awarded, it is easy to say that the three highest prizes, judging by the present position of affairs, must go to American machines.—*Prairie Farmer.*

REMARKS.—Since the above was written, the premiums have been announced, and were published in the FARMER of July 6th.

MARKETING WOOL.

One of the leading farmers of Illinois, who appears occasionally in the *Prairie Farmer* as "Wool Grower," regards the present as one of the dark times for wool growers in that section. He says that all other branches of farming are paying better than this. He charges the wool commission houses of Chicago with operating against the interests of the grower and in favor of the manufacturer. Though written especially for farmers at the West, the following paragraphs may be read with interest by wool growers of other sections:—

I say to wool growers, sell your own wool at your own barn if possible. Sell to a local dealer for three or four cents less than you think it worth, rather than get it stranded in a wool house. The best time to sell wool, nine times out of ten, is when the tide is up at shearing time. It scarcely ever lasts over a week or two, and if you let the opportunity slip you are compelled to ship, and then to commence that weary waiting which makes the heart sick. After the first tide ebbs it is usually from four to six months before you can get even a nibble for wool, and then when you do effect a sale, by the time you deduct freight and commission, and insurance, and storage, and drayage, and sale tax, and re-sackage, and stealage, and one-third off, and half off, and in some cases, *all* off, you will find that you might have sold at home for from six to fifteen cents per pound more money.

The one great drawback to wool-growing in the United States is not dogs nor scab nor foot-rot, but the manner of marketing. There is no other staple agricultural product grown in our country, the purchasers of which are so few in number, and hence, able to make such soul-eating combinations to affect prices, as wool. The manufacturers and their organs never let up during the entire circle of the year, from "bearing" the wool market. The buyers of grain are not always "bears," but there is always an equally smart lot of "bulls," which helps to keep grain somewhere near an equilibrium; but the purchasers of wool are always, and everywhere, "bears."

A FINE FIELD OF RYE.—A correspondent informs us that he recently visited a field of four acres of rye in Tower Hill neighborhood, Lawrence, Mass., that he thinks deserves honorable mention. It is on the farm of Richard H. Kent. Four years ago the field was cleared of a growth of pine, the land plowed and set to apple trees. It has since been planted to potatoes, corn, &c., and well manured. The present crop of rye attracts considerable attention from its heavy and even growth,—some of the stalks being seven feet high by actual measurement. Mr. Kent has promised to furnish a fuller account of the crop after harvesting.

EXPERIENCE IN BEE-KEEPING.

Seven years ago this spring, I commenced bee-keeping, hardly knowing a honey-bee from a humble-bee; but I procured the best works on bees, such as Langstroth's, Quinby's, Kidder's, &c., and studied the theory of scientific bee-keeping, which I immediately commenced to put in practice, going very carefully at first, and as the result, my bees have averaged over $5.00 per swarm, yearly, in surplus honey, besides the increase; and we have had two or three very poor seasons for honey in the time —1865 was the poorest we have had in thirty years—so old bee-keepers tell me.

Last year, (1866,) I commenced the season with twenty-three swarms in poor condition; most of them had to be fed as soon as set out, to save them from starvation; but the month of April was very pleasant, and as soon as the soft maple was in bloom, the bees got their living, and some of my best swarms stored eight or ten pounds ahead.

In the month of June I bought one of Langstroth's Italian queens, and as fast as I could raise queens I divided my bees and furnished the queenless part with an Italian queen. After dividing I raised more queens, to take the place of the black queens.

I closed the season with fifty-four swarms, (mostly Italian,) and 544 pounds surplus honey.

I put my bees into the cellar Dec. 4th, and took them out April 10th, 1867, and found them *all* in good condition. I fed a few of the lightest swarms by changing frames

with those that had a surplus. Bees are storing honey from the soft maple now, but not as much as they did last year. The honey crop of 1866 was better (in our county) than for several seasons previous.

I intend to raise another set of queens, to take the place of those that paired with the black drones last season. I shall not let any black drones fly in my apiary this season. I make my hives double, with a dead air space all around the swarm, thereby securing a more uniform temperature, both summer and winter. I think a double hive much the best for our changeable climate, and they cost but a trifle more.—*George T. Wheeler, in Country Gentleman.*

Ladies' Department.

From "May-day and other Pieces," by R. W. Emerson.

BIRDS AND FLOWERS.

Ah! well I mind the calendar,
Faithful through a thousand years,
Of the painted race of flowers,
Exact to days, exact to hours,
Counted on the spacious dial
You broidered zodiac girds,
I know the pretty almanac
Of the punctual coming back,
On their due days, of the birds,
I marked them yestermorn,
A flock of finches darting
Beneath the crystal arch,
Piping, as they flew, a march,—
Last year, from yon oak or larch;
Dusky sparrows in a crowd,
Diving, darting northward free,
Suddenly betook them all,
Every one to his hole in the wall,
Or to his niche in the apple tree.
I greet with joy the choral trains
Fresh from palms and Cuba's canes,
Best gems of Nature's cabinet.
With dews of tropic morning wet,
Beloved of children, bards, and Spring,
O birds, your perfect virtues bring,
Your song, your forms, your rhythmic flight,
Your manners for the heart's delight,
Nestle in hedge, or barn, or roof,
Here weave your chamber waterproof,
Forgive our harms, and condescend
To man, as to a lubber friend,
And, generous, teach his awkward race,
Courage, and probity, and grace!

HOUSEHOLD ECONOMY.

CONTRIBUTED FOR THE NEW ENGLAND FARMER.

Unleavened Bread.

I have long been proposing to send you my way of making unleavened bread, as I think it much superior in point of health to any other kind.

For Brown Bread take two parts of Indian meal to one of rye or Graham. Scald the Indian, then add the other with cold water sufficient to moisten it enough so that it can be thoroughly mixed. Salt and molasses can be added if desired, but it is good and more healthful without. This kind of brown bread is wholesome, when warm from the oven. It may be made in loaves three or four inches thick, and should stand upon the back part of the stove, or where the bottom will receive a scalding heat for an hour before being placed in a hot oven, when, if thoroughly baked, it will be light and sweet.

The crust is harder than that of raised bread, but it makes a palatable dish by itself, if taken off and soaked in milk, allowing it to come to a quick boil before taking up; or it makes a good pudding for a plain farmer's dinner, if steeped in apple-sauce, and eaten with butter and sugar, maple syrup, or sweet cream; or if one prefers a made sauce, a nice one can be had by combining nice sour cream with molasses, (maple is best), or if sweet cream is used, a spoonful or two of vinegar or cider, or a little tart jelly dissolved in it improves it, and a little nutmeg can be added; or a plainer sauce can be made by taking a pint of milk, saving out enough to moisten two spoonfuls of flour, boil and thicken, and add an egg beaten with three spoonfuls of white sugar after it is taken from the fire, so that it will not harden the egg. One of the most palatable of Indian breads can be made by substituting flour for the rye meal, and there is no end to the variety of ways in which healthful, palatable, unleavened cakes can be made, either by using muffin rings, roll or patty pans, (the French roll pans are much the least trouble,) or by making them in drop cakes, or forming them into little cakes in the hand, covering them with flour; and a little time devoted to experimenting with them, I do not deem misspent.

I will give you one receipt for

Pop-Corn Pudding,

which I think very good.

Take of corn well popped, and rolled, pounded, or ground, one heaping teacupful; one quart of milk, one egg, nearly a cupful of sugar, a little salt and spice to taste. Soak the corn in the milk over night, add the other ingredients and bake two hours.

Apple Pie.

Take one egg and half a cracker, or if the plate is large, a little more, to a pie, and about two good sized, sour apples, which may be grated raw, or stewed and strained, with a little nutmeg and salt. Use but very little more sugar than for common custard pies, preparing with milk, like them.

I desire in receipts a variety of plain dishes, easily prepared, and thinking that others may appreciate the same, have tried to contribute my mite; but I fear it may not be very acceptably written, from confusion produced by the interruptions of my little ones, as their care, with that of my household, gives me little uninterrupted time.

East Princeton, Mass., 1867. Nellie.

Union Cake.

One cup of butter, two of sugar, three of flour, one of milk, one-half cup of corn starch, four eggs, two teaspoonfuls extract of lemon, one of cream tartar, one-half teaspoonful of soda.

Hard Gingerbread.

One and one-half cups of white sugar, one-half cup of butter, one-half cup of sweet milk, one-half teaspoon soda, one of cream tartar, one egg, ginger to suit the taste, or nutmeg and cinnamon. Knead in flour enough to make a very hard dough, and roll out to the thickness of pie-crust.

Pudding.

Two cups of flour, one of chopped suet, one of raisins, or any other dried fruit, one egg, two tablespoonfuls of molasses, one teaspoonful of soda, one cup of new milk, spice to suit the taste, steam one and one-half hours. Eat with liquid sauce.

Imitation Corn Starch Pudding.

One quart of milk, and a little salt. Thicken one-third of the milk to quite a thick, smooth paste, with flour; add two eggs well beaten, and stir into the remainder of the milk, when it boils. To be eaten cold with cream and white sugar.

Dudley, Mass., 1867. A FARMER'S WIFE.

MR. EDITOR:—As I feel quite interested in reading the receipts, and have tried some which appear in your paper from time to time, I thought I would send a few which *certainly* belong to "Household Economy," but I consider them good enough for use sometimes.

Brown Bread.

Among the receipts for brown bread, I find none which suits me any better than mine. I do not think sweetening improves the bread enough to pay for the molasses used.

I prefer mixing at night. For two loaves, I take five pints of Indian meal, nearly the same of rye, full two-thirds of a cup of yeast (I like "Ruby's" way of making yeast very much;) mix with warm water. In summer I use cool water. In the extreme hot weather of last summer I took cold water. When I do not mix at night, I scald the Indian meal, and use warm water.

Indian Griddle Cakes.

Two cups of sweet milk, the same of sour, one teaspoonful of soda, salt; one-third flour, two-thirds Indian meal; mixing a little thicker than when all flour is used. The flour sifted from the meal will make them better, if any one has a fine sieve.

Molasses Cake.

Two cups of buttermilk, one cup of molasses, one teaspoonful of soda, a little salt, flour enough to make a batter not so thick but it will run. I sometimes vary this with ginger or caraway seed.

Pepperell, Mass., 1867. HANNAH.

ABOUT CURRANTS.

Currants Preserved.

Take ripe currants free from stems; weigh them, and take the same weight of sugar; put a teacup of sugar to each pound of it; boil the syrup until it is hot and clear; then turn it over the fruit; let it remain one night; then set it over the fire, and boil gently until they are cooked and clear; take them into the jars or pots with a skimmer; boil the syrup until rich and thick, then pour it over the fruit. Currants may be preserved with ten pounds of fruit to seven of sugar. Take the stems from seven pounds of the currants, and crush and press the juice from the remaining three pounds; put them into the hot syrup, and boil until thick and rich; put it in pots or jars, and the next day secure as directed.

Currant Jelly.

Pick fine, red, but long-ripe currants from the stems; bruise them and strain the juice from a quart at a time through a thin muslin; wring it gently to get all the liquid; put a pound of white sugar to each pound of juice; stir it until it is all dissolved; set it over a gentle fire; let it become hot, and boil for fifteen minutes; then try it by taking a spoonful into a saucer; when cold, if it is not quite firm enough, boil it for a few minutes longer.

Jelly.---Another Receipt.

Put your currants in a bell-metal kettle and scald them well; when cool press them through a sieve, getting out all the juice, (be careful not to allow any skin or seeds to pass through the sieve,) measure the juice and put it back again into the kettle and let it boil hard for five or six minutes, skimming it well; then add while on the fire boiling one pound of sifted loaf sugar to every pint of juice; stir it till dissolved, which it will be in a few minutes; it *ought not to boil* after the sugar is in, all that is necessary is to have it well dissolved, and then it is done and ready to put in the tumblers. It tastes much more of the fruit, and is a beautiful light color. Will keep for years if necessary.

Currant Jam of all Colors.

Strip your currants and put them into your pan, with three-quarters of a pound of sugar to a pound of fruit; add your sugar after your fruit has boiled a few minutes; boil all together, mashing your fruit with a wooden spoon; boil all gently for half an hour, then fill your jars.

Currant Wine.

Dissolve eight pounds of honey in fifteen gallons of boiling water, to which, when clarified, add the juice of eight pounds of red or white currants; then ferment for twenty-four hours; to every two gallons add two pounds of sugar, and clarify with whites of eggs.

Black Currant Vinegar.

To four pounds of fruit, very ripe, put three pints of vinegar; let it stand three days; stir occasionally; squeeze and strain the fruit. After boiling ten minutes, to every pint of juice add one pound of lump sugar. Boil twenty minutes.

Currant and Gooseberry Compote.

Put one quart of red currant juice to five pounds of loaf sugar; set it on the fire, and

when the sugar is dissolved put in eight pounds of red, rough, ripe gooseberries, let them boil half an hour, then put them into an earthen pan and leave them to stand for two days; then boil them again until they look clear; put them into pots and let them stand a week to dry a little at the top, then cover them with brandy papers.—*Germantown Telegraph.*

A BEAUTIFUL TRIBUTE TO A WIFE.

I was guided in my choice only by the blind affections of my youth. I found an intelligent companion and a tender friend, a prudent monitress, the most faithful of wives, and a mother as tender as children ever had the misfortune to lose. I met a woman who, by tender management of my weaknesses, gradually corrected the most pernicious of them. She became prudent from affection; and though of the most generous nature, she was taught frugality and economy by her love for me. During the most critical period of my life, she relieved me. She gently reclaimed me from dissipation; propped my weak and irresolute nature; she urged my indolence to all the exertions that have been useful and creditable to me, and she was perfectly at hand to admonish my heedlessness or improvidence. To her I owe whatever I am; to her whatever I shall be. In her solicitude for my interest she never for a moment forgot my feelings or character. Even in her occasional resentment, for which I but too often gave her cause (would to God I could recall those moments!) she had no sullenness or acrimony. Her feelings were warm, nay, impetuous; but she was placable, tender and constant. Such was she whom I have lost, when her excellent natural sense was rapidly improving, after eight years struggle and distress had bound us fast together, and moulded our tempers to each other; when a knowledge of her worth had refined my youthful love into friendship, and before age had deprived it of much of its original ardor. I lost her, alas! the choice of my youth, the partner of my misfortunes, at a moment when I had the prospect of her sharing my better days.—*Sir. James McIntosh.*

To Preserve Raspberries for Creams or Ices Without Boiling.—Let the fruit be gathered in the middle of a warm day, in very dry weather; strip it from the stalks directly, weigh it, turn it into a bowl or deep pan, and bruise it gently; mix with an equal weight of fine, dry, sifted sugar, and put it immediately into small, wide-necked bottles; cork these firmly without delay, and tie bladders over the tops. Keep them in a cool place, or the fruit will ferment. The mixture should be stirred softly, and only just sufficiently to blend the sugar and the fruit. The bottles must be perfectly dry, and the bladders, after having been cleaned in the usual way, and allowed to become nearly dry, should be moistened with a little spirit on the side which is to be next the cork.

THE
NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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R. P. EATON & CO., PUBLISHERS, OFFICE, 34 MERCHANTS' ROW. MONTHLY. SIMON BROWN, S. FLETCHER, } EDITORS.

SEPTEMBER.

"Sweet is the voice that calls
From babbling waterfalls
In meadows where the downy seeds are flying;
And soft the breezes blow,
And eddying come and go
In faded gardens where the rose is dying."

SEPTEMBER, once more, in the never-ceasing march of the seasons, calls upon us this year for the exercise of all our powers of industry and skill, to gather up and secure for future use the abundant crops of our fruitful soils.

Never before, it seems to us, have the trees and all large plants been so clothed with a dense, high-colored and vigorous foliage, while the face of the earth is covered, almost beyond precedent, with all crops common to the season. Timely and copious rains, warmed by genial suns, have percolated the soil in all her pores, found the minerals there which plants require for a full development of their parts, and

"Thrust blooming thence the vegetable world."

In addition to the abundant hay-harvest of June and July, the "aftermath," "rowen," or second crop of August, has been so abundant as scarcely to find room in the already crowded barns.

The Indian corn has a luxuriant growth of leaf and stem, is a little late, and if spared by frosts, and if properly secured, will add largely to the aggregate value of next winter's fodder.

The root crops, also, have a redundant foliage, which is greatly relished by all the farm stock. All these are prime sources of milk, butter, cheese, beef, mutton, &c., and if carefully husbanded, will materially swell the profits of the farm.

The impression with some is that the price of hay will be low during the next six months. There are some reasons why it may not be. At the commencement of the present haying season, scarcely ten tons of old hay could be found in any one of our best farming towns. All the poorer kinds of fodder had been economized, chopped, grain added to it, and fed out in order to send the best hay to market, and get from $35 to $50 per ton for it! This state of things extended far into the country, where the best hay was pressed and sent forward, and the poorer used at home. Before June came, the barns in nearly all parts of New England were empty as they had not been before for many years.

In addition to this, the demands of our vast armies during the war had swept off our beef cattle to an unparalleled extent, and horses in a still larger proportion, so that most of the farms in the country had scarcely more than one-half the stock they had been in the habit of feeding.

Now, farmers are purchasers. They care to sell only those animals that happen to be in excellent condition for market, and those which they are fatting on account of age, because they are poor milkers, or for some other cause.

These opinions are held by most farmers and will have a decided influence in keeping up the price of hay. To these may be added another, that so long as the prices of labor, building materials, clothing, grain, groceries, &c., are high, hay, also, will be high.

Some signs of rot have been found in the potato crop. The breadth of ground occupied with this indispensable vegetable is large, and the growth luxuriant.

The apple crop is light, very light, but still there are many trees having fruit upon them that will be quite fair and of good size. Several varieties of sweet apples, the Rhode Island Greening, and Porter, have moderate crops upon their trees. Scarcely a Baldwin tree is in fruit, so that all that pretty poetry about their red cheeks glistening in the sun, may well give place to a little that will make us careful how we collect what does grow:

"Fruit gathered too timely will taste of the wood,
Will shrink and be bitter, and seldom prove good:
So fruit that is shaken, and beat off a tree,
With bruising in falling, soon faulty will be."

On the whole, farm affairs are promising. Some apples, glistening in the sun this morning. We shall have peaches, pears, and plenty of preserved small fruits.

WORK FOR SEPTEMBER.

Wheat. If not put in last month, early in this is better than to postpone it entirely. It needs a rather stiff clay loam, and on such a soil that is in fair condition, the crop will rarely fail.

The Rye crop we have spoken of in another article.

Turnips. Thin out and weed the turnips; keep the soil loose about them.

Strawberry plants may be set early in this month; and if carefully tended and slightly covered with straw in November, will make a good start.

Fattening Animals. It is better to begin to feed swine liberally now, than to postpone it to a later day. Whatever the animals are, feed plentifully, and make them comfortable in their yards and sleeping rooms, and they will gain faster than they will in cold weather. They prefer a *variety* of food, and will do better upon it, than they will if confined to a single article, even though some portion of the variety be of a poor quality.

Peat. Spare no reasonable cost to lay up a large quantity of this valuable fertilizer. Remember that "Muck is the mother of the meal chest." We urge the use of peat by the farmer with more emphasis than almost any other point. We *know* its value by the experience had with it for many years. It is useful on *all* lands—light or heavy. We have restored exhausted, heavy clay loams with it, as well as to bring life and vitality to barren sands and gravelly knolls! Our own experience is corroborated by that of many successful farmers, and by the intelligent attention given the subject by those who have ascertained its value by actual use in the soil and by critical analysis.

Among the latter is Prof. Samuel W. Johnson, the chemist of the Connecticut State Agricultural Society. He says *the characters that adapt peat for agricultural uses*, are

Those which render it useful in improving the texture and other physical characters of the soil, and indirectly contribute to the nourishment of crops, and

Those which make it a direct fertilizer. As an amendment, the value of peat depends upon,

1. Its remarkable power of absorbing and retaining water, both as a liquid and as vapor.
2. Its power of absorbing ammonia.
3. Its action in modifying the decay of organic (animal and vegetable) bodies.
4. Its effects in promoting the disintegration and solution of mineral matters, (the stony matters of the soil;) and
5. Its influence on the temperature of the soil.

These are vital points of interest to every cultivator of the soil. Peat actually *assists* in dissolving sand, gravel, and the rocks themselves, and liberating their potash and other valuable minerals for the nutrition of plants.

There is no other possible way in which New England farming can be made so profitable as by the use of large quantities of peat. We can only speak of the subject in this brief way at present, but will take early opportunity to lay more of the Professor's clear and concise facts on the subject before the reader. We wish his whole work could be in the hands of every intelligent and progressive farmer. Do not delay the work until it is too late.

Seeding Land to Grass. Early in Sep-

tember is a good time for this work, but not quite as favorable as in August. Where the object is to keep land in grass, rather than in hoed crops, the sward may be turned over and seeded directly with perfect success, if the work is properly done.

Very many other things belong to September work which the *systematic* farmer will not neglect.

A WINTER RYE CROP.

"Thresh seed, and to fanning, *September* doth cry,
Get plough to the field, and be *sowing of rye*;
To harrow the ridges, ere ever ye strike*;
Is one piece of husbandry *the farmer* doth like."

One of the most important items of farm work for Septemper is *to get in the rye crop*. Some persons do it late in August, but it is generally done in September. We say it is an important work, because we believe that *ten times* as much rye flour ought to be used in the family as there now is—and the same amount of bleached, bewitched and highly-manufactured wheat flour discontinued. No sweeter or better bread ever passes our lips than that made of rye flour. In warm biscuit for breakfast it is unsurpassed, and for invalids, a pudding made of it is grateful to the taste, easy of digestion and nutritious. It has a remarkable muscle-making power.

Rye is adapted to nearly all our sandy lands, —the pine plain lands which exist all over New England. Such land is easily worked, and when generously treated gives bountiful returns of this valuable crop. The richer the land, however, the more vigorous and luxuriant the crop will be. It is the only grain, we believe, that will flourish on land that contains eighty-five parts in a hundred of sand. It is a common practice to crop rich land until it is exhausted, and then let it repose for some years, when it will collect sufficient nutrition to enable it to bear a crop of rye, which, however, will be likely to be a poor one. Would it not be better,—would there not be a larger amount of grain secured, by cultivating less land, and manuring it a little, and thus save the labor of plowing and working so much?

Early-sown rye may be fed, says the *Country Gentleman*, with sheep or calves, during the month of November, with great benefit to the stock, and if the growth is large, with decided benefit to the crop, as a large quantity of herbage, lying on the ground in the winter, renders the crop liable to be "smothered," as it is called, especially if it is covered long with snow. No injury results from feeding rye with sheep or light cattle, any time in winter, except when the ground is so soft that it would be "poached," and the roots of the rye be broken, and there is no food better for such animals."

Spring rye and *winter* rye, are not distinguished by any botanical characteristics, but simply by a property which has been artificially communicated to it, and of which it may be deprived by a change in the mode of cultivation; viz., that of coming more quickly to ear. Spring wheat is often made to become autumnal or winter wheat. Winter rye has some properties peculiar to itself; it remains longer in the ground than spring rye, grows more bushy, and does not put forth its stems or seed stalks until late in the season.

Winter rye, sown in the spring for several successive seasons would probably acquire all the characteristics of a spring rye, and *vice versa*. It would be the same with wheat.

Early in September—the earlier the better —is a good time to get in a crop of rye. Its use as food for the table is becoming more *fashionable*, and it will tend to health and activity. It is cheaper than wheat flour, and the straw is always in quick demand at high prices; besides these recommendations, it is one of the *surest* crops we can cultivate. Get in the rye crop, then, on land that has not been exhausted, and as much profit from it will be realized as from any of the green crops of the farm.

**Striking* is the last plowing before the seed is sown, and the poet wants the ridges harrowed down before that plowing takes place.

"Good Wine Needs no Bush."—This is an old proverb, and means that it needs nothing to point out where it is sold, because it was an ancient custom to *hang up a bush*, or vine, where wine was sold.

In a book called "Greene's Conceipt" 1598, it is said, "Good wine needs no Ivie Bush."

In "England's Parnassus," London, 1600, the first line to the reader runs thus: "I hang no Ivie out to sell my wine."

In Vaughan's "Golden Grove," London, 1608, is the following passage: "Like as an Ivy Bush put forth at a vintrie, is not the cause of wine, but is a Signe that wine is to be sold there."

TURNING IN GREEN CROPS.

PROBABLY there is no method by which *humus* can be so speedily and economically supplied to an exhausted soil, as by *turning in green crops*. For this purpose the buckwheat plant is very valuable, as it flourishes on lands which are too far reduced to produce any other grain, and as it decomposes rapidly, even when there is but a limited supply of moisture in the soil.

It is an oriental production, having been brought from the East during the Crusades, and has not lost its sensibility to cold; it therefore succeeds best on dry, sandy soils, where there is a good degree of heat. It will, however, thrive on lower lands, if previously drained, and on dry clays; so that, as a green crop for supplying *humus*, it is tolerably well adapted to every variety of soil on which it is desirable that such a crop should be grown.

On these light sands, and especially on hillsides, the labor of carting manure is a serious obstacle to their permanent improvement, and where, also, the wash of the autumnal and spring rains deprives the surface of everything in the condition of resolvable humus, no process of manuring can exceed the one now recommended, either as regards efficiency or economy. Such lands generally produce a slight vegetation which is rarely worth the expense of harvesting, but which may be of service if turned down and followed by a green crop.

When this course is adopted, plow when the grass growing upon the land has obtained its *maximum* growth—say, just in blossom. Then roll thoroughly, and after giving the surface a good working with the harrow, sow the seed, and roll again. The latter rolling will facilitate the germination of the seed, and also render the labor of turning in more easy.

When the wheat makes its appearance, a good dressing of lime should be applied, and the crop turned under as soon as it is in bloom. The roller must now follow the plow, and another application of lime, with a dozen bushels of wood ashes to the acre, would improve the next crop exceedingly.

It is an error to suppose that by adopting this process of enrichment, we necessarily return no more to the soil than the crop turned in takes from it. The aliment of buckwheat, as well as the aliment of all other crops, is derived, in part, from the atmosphere; so that we not only, in this process, obey literally a fundamental principle of good husbandry, in returning *all* to the land which we take from its vegetative powers and resources, but a considerable amount beisdes. Were the crop to restore only what it derived from the land—allowing the land to receive nothing from the atmosphere, in the meanwhile—the turning in of green crops, now so universally recognized as a judicious means of enrichment, would be abandoned, or rather would never have been devised or practiced.

In order that the reader may comprehend more fully the fertilizing capabilities of buckwheat, we annex the following analysis. It may be proper, however, to remark that the quantity of silica, which appears large in proportion to the other constituents, may have been increased by the dust adhering to the grain in this case.

Silica,	7.06
Earthy phosphates,	57.60
Lime,	0.14
Magnesia,	2.66
Potash,	23.33
Soda,	2.04
Sulphuric acid,	7.30
Chlorine,	0.20
	100.33

Plain lands that possess but little fertility, and which consequently require manuring before they can be profitably cropped, may be prepared for producing good crops of rye, by a crop of buckwheat. Rye is the only product which alternates favorably with this grain, and may be grown after it on any soil of ordinary richness. As a preparatory crop for the former, it is perhaps the most valuable that can be suggested.

For sowing, from half a bushel to three pecks of good seed is the proper quantity for an acre. It should be sown as evenly as possible, for on this will depend the uniformity of amelioration, in a great measure. No previous preparation of the seed is necessary, as it germinates readily in soil that is too dry to insure the vegetation of most other grains, and is so hardy that no ordinary privation of moisture is capable of seriously affecting its development while young.

As it is one of the class of lime plants, it is more essentially benefited by calcareous matter—that partaking of chalk or lime—than any other crop; consequently the application of

that mineral, unless the soil be calcareous, tends greatly to promote its growth and value, both as regards the plant and seed.

Prof. Johnston says, "a green crop plowed in is believed by some practical men, to enrich the soil as much as the droppings of cattle from a *quantity of green food* three times as great."

For the New England Farmer.

HOW PLANTS GROW.---NO. III.

By means of food derived from the atmosphere and the soil. This food consists chiefly of carbon, hydrogen and oxygen. Water consists of oxygen and hydrogen, so that we may say that carbon and water constitute the staple food of plants. Nitrogen is found in some plants, and phosphorus in the seeds of many. These two latter elements do not seem essential to the growth of plants, for many are found without them.

Various salts, as lime, potash, soda, iron and sulphur are held in solution in water, and are drank in along with it by the radicles of plants, and are deposited in the cells and in their interstices, which compose the frame work of plants, and contribute something to their bulk, and serve to modify their properties and products. A large quantity of water is drawn from the soil and strained through the vessels of plants. A sunflower, presenting between five and six thousand inches of surface, was found by Hales to exhale from twenty to thirty ounces of water daily, depending upon the condition of the atmosphere. When this was in a condition to hold in solution the minute particles of water presented to it upon the surfaces of the plant, the exhalation went on vigorously. No perceptible exhalation occurred in dewy nights, because the air then contained more water than it could hold in solution. What quantities of water, then, must pass through the immense surface presented by the leaves of a large tree!

But this water leaves in the plant whatever solid substances it contained in solution. In many plants these earthy salts seem to serve very little other purpose than to harden and solidify the tissues. In others they combine with acids that are formed in the vessels, and serve to give character to the plants, and are found in their juices as oxalate of lime, malate of lime, tartrate of potash, &c. Such salts are found most abundant in the leaves and fruits of plants; in less quantity in the stems and roots. We have said the principal articles of plant food are carbon, oxygen and hydrogen. Of these, carbon is the one most abundantly worked up in the growth of the plant. It is the material of which the root and stem, the branches and leaves are chiefly composed. It is received into the plant in the form of carbonic acid gas, or carbon combined with oxygen, which naturally has a gaseous form. When received, united with water, through the roots of plants, it is carried up through the stems into the leaves. When received through the pores of the leaves from the atmosphere, it is immediately mingled with the sap in the leaves brought up from the roots. It is subjected to the action of the light in the leaves, by which the oxygen is separated from the carbon. The oxygen goes off in the form of an invisible gas, and the carbon is retained and combined with the sap already formed, and is carried with this to the formative vessels which are at work in the plant. Thus, particle by particle, the vessels of plants obtain from an invisible gas, the material of which their structure is chiefly formed. That the structure of plants is chiefly composed of carbon, we may determine by examining a piece of charcoal, after everything else has been driven off by heat. We find that it consists of nearly pure carbon, and retains the form and nearly the size of the plant.

Animals feed on materials that have been organized in the vessels of plants. They have not the power of assimilating and vitalizing inorganic mineral matter. But plants feed on dead inorganic matter. They have the power of assimilating and appropriating to their own use, material derived from the mineral kingdom. The amount of material annually organized into the structure of vegetables on the surface of the earth, is inconceivably great. Whence is it obtained? From what sources derived? I answer, from the air and from water. Pure atmospheric air consists of oxygen and nitrogen. But air is not pure as it is presented to plants. It contains various substances in solution; substances which may be said to be accidental to it, which are not essential to its constitution, and may therefore be withdrawn from it without injury. These substances are collected into the atmospheric ocean, by which all plants are constantly bathed, and stored there for their use. About one thousandth part of the atmosphere is carbonic acid. This is returned to the atmosphere by the decay and combustion of vegetable and animal matter; by the respiration of animals, and by the decomposition of minerals, as fast as it is withdrawn by the growth of vegetables, so that the balance is never greatly disturbed. Carbonic acid gas is somewhat heavier than common air, and tends to accumulate in the lower strata of the atmosphere. Thus we find it in valleys, pits and wells. This circumstance brings it within reach of plants. But it is incapable of sustaining animal life, and the simple fact that carbonic gas is heavier than atmospheric air, would cause all animal life to cease from the earth, had not some compensation been found. This compensation consists in the withdrawal of this gas from the air, by the vessels of growing plants. As we ascend into the atmosphere, carbonic acid is less abundant. Perhaps this is one reason why plants thrive with less vigor in elevated situations.

Thus the very substances, which, accumulated, would destroy all animal life, is converted by a change of form, into the means of nourishing and sustaining every form of animal life.

Concord, Mass., July, 1867. R.

For the New England Farmer.

NOTES ON THE CONNECTICUT VALLEY.---No. IV.

Conveniences and Cost of Farm-Houses.

I think that almost every person on passing through this section of country would be struck with the large size of the farm-houses and numerous farm-buildings. The first query that arises in the mind is, how can it be possible for the farms to keep such buildings in repair? This question I am still unable to solve. Tobacco-raising may do it in some cases.

We see many old buildings with the long sloping roof on the rear side, and the short, steep roof in front; carrying us back to Revolutionary times, or to prior periods. Our fathers *believed* in big chimnies, and had them. In this, as in many other respects, we see evidence of the reaction that has taken place in architectural taste. We now occupy the smallest possible space in constructing them.

I do not fancy the style of the modern built farm-houses of this section. There is too much *outside* to them, for economy, comfort, or convenience. In illustration of this, I have a house under my eye that was put up the past summer, with four rooms on the ground *three* of which are *ells*, with windows on three sides of each of the ells, and an *outside* door to each room. With the exception of these outside doors, the rooms above correspond with those below. For summer occupancy this, of course, is all very well. For winter, give me less exposed quarters. From the inconvenience of doing the necessary house-work, as well as from the worse than needless expense in building and keeping in repair of such structures, deliver me. Think of the weary steps that must necessarily be taken to accomplish the daily duties of a family in such an ill arranged establishment. If a person is ever a subject for commisseration, it is the poor housewife, going into a new house of this description; where she must inevitably wear herself out in encountering the extra care and toil consequent upon its defects.

How much of the worn and wearied looks we too often see in farmers' wives are to be ascribed to the want of properly arranged houses — those adapted to their calling — we are, of course, unable to determine; but no doubt very much of it is traceable to this cause. As a general rule the *ease* and *economy* of doing the work of a household is overlooked in its planning.

As a rule that admits of few exceptions, a square house, with an ell, is every way the most economical in cost, and can be made in its internal arrangements the most convenient. In a square building we get the greatest amount of room with the least *surface*,—unless you resort to hexagon, octagon or circular, which few incline to, although strenuously recommended by some. I hope the day is not far distant when the proper construction of our farm-houses will become to those who purpose building, a subject for wise forecast in the particulars I have adverted to, viz: economy of cost, and conveniences for doing the work of a family. K. O.

East Windsor, Ct., 1867.

POULTRY AT THE PARIS EXPOSITION.

From an article on this subject by the correspondent of the *Prairie Farmer*, we extract the following paragraphs:—

There are in all 408 coops, or about 1225 fowls, of all the best breeds, viz: Brahmas, Dorkings, Black Spanish, Shanghai, Gold and Silver Spangled Hamburgs, Cochin China's, Dominiques, Maylay, Bantams, &c.

The exhibition of geese is not large, but embraces some excellent specimens of the Toulouse, Danube, Egyptian, Barnacle, and Embden varieties. The best turkeys are from an Irish exhibiter of Limerick. Generally these fowls are far inferior to those bred in the States. The show of ducks is very good, embracing the Normandy, Aylesbury, Poland, Labrador, Siffilers (Whistlers,) and three or four inferior French breeds.

The show of poultry and farm fowls is the the best by far that I have ever seen. The specimens, as I believe, with one exception, were from French poultry yards. The superiority of French fowls is well known everywhere and is the result of the love of this people for eggs and fowls for table use. A dinner without a fowl of some kind, is considered incomplete, and at breakfast, eggs, in some form, are considered almost indispensable. The consequence is, as before stated, great perfection in the breeding and management of domestic poultry.

Besides the breeds of hens mentioned above, there are four varieties, all of French origin so far as I can learn, that are not generally known to our breeders, that are certainly worthy of description and should be generally introduced into our country.

La Fleche---Arrow.

This is the race from which come those fattened pullets, so renowned and so remarkable for the firmness and delicacy of flesh, and which are generally known under the name of Du Mans. This fowl has a large, strong frame, and is very tall. Its plumage is black, with a greenish tinge, without any mixture of color. When young, the legs near the feet are of a grayish slate color, which, as they grow old, becomes less deep and rich The beak is strong, and the nostrils very open; the earlap

is formed of a whitish, well-developed membrane; the crest divides at the base, and forms two round and pointed extensions, like horns, an inch or more in length, from which, in the country, it gets the name of the "horned fowl." The weight of the hen when mature—say ten or twelve months of age—averages about six and a half pounds. The cocks at the same age weigh a pound or two more, and increase in weight until eighteen or twenty months of age.

They seldom commence laying before seven months old, and lay very few eggs in winter; but from the last of February they lay regularly until moulting time. They scarcely ever desire to set, and are not considered good mothers.

Breed of Mans.

The true Du Mans variety differs from the "Flecche" in having a double crest. The form is nearly the same; the weight at maturity is considerably less; the flesh is considered about the same in quality and appearance, and the bird fattens as easily.

Creve-Cœur.

The Creve-Cœur (heart-breaker) has rather short legs; its body is long, plumage black, head ornamented with white feathers. Its early crest often presents the horned appearance of the Fleeche; the whiskers are thick, and the cravat very decided. Weight of mature female, six to seven pounds. The male of this breed, has a black plumage, tinged with green, very lustrous. They may have the collar and tips of wings a little pale or red, and yet be pure. After the second moulting, the tuft of the male bird should always contain some white feathers. When well fed, the cock at maturity should weigh seven or eight pounds.

This breed originated in Normandy, and is there in high repute with all the farmers. They are the first chickens sent to the Paris market, reaching here in April or May—a month or so in advance of those from any other department of the country.

The Houdan.

The plumage is an unique mixture of black and white. The head is very large and strong and surmounted by a tuft less dense than that of the Creve-Cœur; "cravat and whiskers" prominent; crest and wattles small. The feet are of a grayish lead color, and have five toes—two above each other, projecting from the hind part of the leg, above the heel. Weight of mature pullet, five to six pounds. The cock has a mottled plumage of tan mixed with pale yellow, though generally black and white. The feathers of the tail and wings have a very marked green hue. Up to three months of age the black predominates, after which time the white increases. The crest is divided into two parts, having the appearance of horns, like the Fleeche breed. Weight of mature cock, from six and a half to seven pounds.

The flesh of the Houdan fowl is very fine and delicate. They take on fat readily, but the hens are smaller and less precocious than either of the first-described varieties.

BUCKWHEAT FOR WIRE WORMS.

D. Marvin of West Alburgh, Vt., writes to the New York Farmers' Club that all the low lands in the vicinity of Lake Champlain are infested with this pest. He says:—

Two years ago I broke a low run-out meadow of eight acres in the spring and sowed to oats, expecting the sward would keep them busy the first season; but they destroyed about one-half the crop. I noticed that where I harrowed in the seed they did not destroy it; but not burying it to suit me, I loaded the cultivator, put on three horses and buried it deep. This was badly eaten. After the crop was taken off we plowed the ground late in the fall, ridging it up and draining it. Last spring, waiting until I thought the seed would grow rapidly, I sowed to oats, having in a considerable sprinkle of buckwheat, purposely, twenty-six bushels in all, to the eight acres. This seed never came up. I never before saw a crop literally eaten up. The worms were so thick when we got in the seed that we could see the yellow fellows roll up behind the cultivator and harrow. The buckwheat, I ought to say, came up, but they evidently ate considerable of this, so that it was a lost crop. The last of June we put in the teams and plowed it all over, and sowed to buckwheat, one bushel to the acre, which, as the ground was strong, was too much by one-half; however, the crop was good, but would have been better with less seed. We plowed again late last fall; the ground was clean and thoroughly fallowed, and on repeated examinations we saw no worms. Buckwheat is our only remedy. Experienced men prescribe two or three crops in succession, two at least, which do not deplete the strength of soil, and so thoroughly fallow it as to starve them out, and it is the only crop that will.

Coal Tar for Sheep.—The Urbana *Citizen*, says that a farmer of Ohio, has used with great success, coal tar for maggots in sheep. When all other remedies failed to remove the maggots from the wounds, he applied the coal tar, which effected a speedy cure.

Tanning.—The report of the Commissioners having charge of this department of the Paris Exposition, have arrived at a conclusion which will meet the approval of practical chemists regarding the various processes for rapid tanning, namely: That no definite advantage has yet been found in these processes, and the period required remains about the same as before.

THE EUROPEAN SILVER FIR.

"Giant trees,
Children of elder time."—*Shelley.*

The Silver Fir was esteemed by the Romans for its use in carpentry and for the construction of vessels. Virgil speaks of

"The fir about to brave the dangers of the seas,"

and in describing the scenes of a particular locality,

"Hills clad with fir to guard the hallowed bound,
Rise in the majesty of darkness round."

They also used its wood for javelins, and the Emperor Caligula had an obelisk transported from from Egypt to Rome, which required the outstretched arms of four men to encircle it. It grows upon exposed, dry, stony places on mountains of the middle and south of Europe, and reaches to the height of from 130 to 150 feet. It is supposed to be the *abies pulcherrima* of Virgil and of Roman authors. Unlike the pines, its leaves grow singly round the branches, all turned toward one side and glaucous or white beneath.

MANURES.

This subject was discussed at the first of a series of Legislative meetings inaugurated by the Committee on Agriculture of the New Hampshire House of Representatives.

Rev. Dr. Barstow, of Keene, alluded to the fact that plaster was of no use in that section.

Hon. Mr. Read, of Swanzey, suggested that as the elements of plaster were present in the soil in sufficient quantities, its further application was unproductive of apparent good.

Mr. True, of Antrim, said no effect is seen if the season is wet, but if dry the plaster placed in the hill attracts the moisture and with this the salts of the soil, keeping the plant in a more vigorous growth than it would otherwise have. He also thought that top-dressing of moist grass lands was a very profitable method of using manures. He used a mixture of stable manure with sawdust which had been used as a litter in the stall.

Mr. Smith, of Lyme, was a friend to sawdust. A few years ago, in planting a piece of pine plain land, he took sawdust that was from three to five years old and put half a shovelful upon potatoes after they had been dropped in the hill. He thought he received as much benefit from it as from the like quantity of green manure, and more than from ashes and plaster. In the fall he had a quantity of green sawdust placed in his garden expecting to remove it in the spring; but it had become so much spread about that all was spaded in. The soil was very sandy. The crops were unusually large that season.

Mr. Read, of Swanzey, uses sawdust. Its value as a fertilizer depends upon the kind of wood from which it is made. Those kinds which make the largest amount of ashes are the best. It must undergo decomposition before it can be of any use as a fertilizer.

During the discussion the following points were made.

1. Potash or lime salts were of use upon nearly all soils that had been long under cultivation, the particular salt to be used depending partly upon the natural constitution of the soil and partly upon the demands of the crop growing or to be grown.

2. Gypsum, sulphate of lime, is useful, not alone on account of the lime of its base, but

from the sulphur of its acid component. Sulphur is an essential constituent of the albumen and gluten of most grains. Many crops fail from the difficulty with which this element is obtained from the slowly decomposing soil. Sulphate can, under these circumstances, be advantageously applied.

3. Gypsum is applied in Europe upon grass, and especially upon red clover, and upon other large leaf crops, in which case its efficacy depends mainly upon an abundant supply of water also.

Mr. Walker, of Concord, said that at the Asylum farm, there has been constructed below the level of the buildings an immense open tank of stone with water-tight walls and floor. Into this several hundred loads of old and well-decomposed muck are put two or three times a year, and upon this is received all the wash from the closets, sinks, laundry, &c., of the Institution. When this mass has become thoroughly saturated, it is removed and its place supplied with fresh. This manure is put upon the lighter portions of the farm, and the stable manure upon those parts that are heavier.

For the New England Farmer.

HOW PLANTS GROW.---NO. IV.

Pure water consists of oxygen and hydrogen. But rain-water is not pure. As I have said, water has a strong affinity for carbonic acid and ammonia, and as its vapor is precipitated in the form of rain, it brings down carbonic acid and ammonia, and carries them into the soil. It is estimated that the surface water is converted into vapor and precipitated from ten to fifteen times annually, thus washing the impurities from the atmosphere and bringing down carbonic acid and ammonia into the soil for the use of plants.

Plants receive all their food in either a gaseous or liquid form. In the atmosphere they find it in the form of gas. In water they find it in a liquid form. Water also contains in solution many other substances derived from the mineral kingdom, which, if not essential to the growth of plants, yet are appropriated by them to the formation of various products peculiar to their several families, as gums, resins, oils, odors, coloring matters, poisons, &c., and to the performance of their secondary functions, the reproduction of their species.

These substances are lime, potash, soda, magnesia, silex, iron, manganese, phosphorus, sulphur. Thus nature has provided the food of plants in two distinct forms and stored it up in two distinct reservoirs. Plants have not the power of locomotion. They cannot roam abroad in quest of their food, like animals, and this double *commissariat* is the compensation which nature has provided. But how do plants grow? We have not yet answered the question. We have merely spoken of the food which plants consume, and the sources from which it is obtained. We have not spoken of the organs by which the assimilation and vitalization of plant food are effected—the formation vessels—the vessels in which secretion and excretion are carried on.

The various organs of plants consist of cells, which were at their formation soft, transparent, round or ovoid bodies, but arranged into congeries and strata, they become elongated and flattened, and in this form are generally presented to us.

A common form of vegetable cells is that which a kernel of rye would present with its two ends cut off so as to leave the ends more blunt than when the grain is perfect. In a growing plant new cells are constantly formed, and arranged in the direction of the axis of the plant, and in the direction of the circumference; that is, plants grow at the same time, both in length and circumference. We have two classes of plants in which the arrangement of the cells differs somewhat. In exogenous plants, or plants which grow by additions to the surface, the new cells are arranged between the sap wood or the albumen and the bark. This is by far the most numerous class of plants in our climate. It embraces all our wood bearing trees and shrubs, and most of our annual and biennial plants. In endogenous plants, as Indian corn, sorghum, the common flags, asparagus and the palms, the cells are arranged in bundles or threads, which grow in the direction of the axis of the plant, and are inserted in the mass of pulpy tissue which the plant contains. If you cut off a stalk of corn and bruise is a short distance from the cut end so as to break the sap vessels, you will have a bundle of threads or fibres. These are constantly multiplying in number and increasing in length from the centre to the inner surface of the enclosing skin or bark.

In annual and biennial exogens, the internal layers of cells become hardened or filled with excretions, and cease to aid in the circulation of the sap, which goes on in the external layers. In perennial exogens a new layer of cells is formed annually. The internal layers after a time become hard and filled by the deposit of foreign substances as lime, potash, silex, &c., or by the excretions of the plant, as pitch, resin, gum camphor, &c., and contribute little or nothing to the growth or other functions of the plant which are carried on in the albumen, and chiefly in the outer layers of that, and in the inner layers of the liber or inner bark. These cells are formed in every part of the plant. They constitute the framework of its root, its stem, and its foliage. In these cells the work of assimilation and vitalization goes on. They are lined with a mucilaginous substance, which, in addition to carbon, oxygen and hydrogen, contain nitrogen. This is the vitally active principle of the plant, and may be said to give form to the plant; for, under its influence, the prepared sap or cellulose is deposited to form the permanent walls of new

cells. This vitalizing mucilage or protoplasm, as it is called, exists in minute quantity and as the cells are completed it moves forward into the new, and forming cells along with the sap or cellulose from which new deposits are going on, it does not become incorporated into the tissues of the cells, or appear to constitue an essential part of them, for it may be washed out of them, and yet its presence is absolutely necessary to the formative process in the vessels of plants. Through the cells thus arranged in the sap wood of plants, water containing the various substances heretofore named in solution, is transmitted. It is carried on into the leaves. Here a portion of it is transmitted through the pores of the cuticle of the leaf, and passes into the atmosphere. Another portion is decomposed by the action of the chemical agencies at work in the cells of the leaf, and its solid contents, together with its carbon retained, and its oxygen is given off into the atmosphere. The carbonic acid imbibed from the atmosphere is at the same time decomposed, and, mingling with that obtained from the water brought up from the soil, now forms the descending or prepared sap, and is transmitted downward in the cells of the inner bark or liber, and carried through the cells containing the protoplasm or vitalizing fluid, which acts upon it, and produces in it that change, whatever it may be, which fits it to be incorporated into the tissues of the plant, and become a part of an organized being. There is a close analogy between the processes by which plants and animals grow, although there are two very important differences. One is that animals make use of foodthat has been previously organized and vitalized; another is that a much higher degree of vitalization is imparted in the vessels of animals than in those of vegetables. We cannot trace the various steps of the process as distinctly in plants as we can in animals. But the results are as obvious in the former as in the latter. The food of plants taken in by the spongioles of the roots and by the pores of the leaves and green bark is carried forward in obedience to certain forces operating in the cells of plants, until it reaches the cells of the leaf, as the food of animals received by the mouth, and under certain circumstances, by the pores of the skin, is carried forward until it reaches the lungs. In the leaf, as in the lungs, certain chemical changes are wrought upon the food by external forces to which it is here presented. In the one case the change is effected by means of the chemical affinity existing in one of the constituents of the atmosphere for an element presented to it in the blood. In the other case the change is effected through the chemical agency of light, aided by the stimulus of heat. In both cases the result is a fluid containing certain elements fit to be incorporated into the growing tissues.

When an abundant supply of suitable food is taken up by plants, new cells are rapidly formed, and become engorged by tissue-forming fluid. The cells are then large and filled with sap, and the tissue formed is soft and spongy. The plant is then growing vigorously. In a short time, it may be in a few days or weeks, the vessels cease to take in food so greedily. Solid matters are deposited in the cells, and they become firm and hardened, and growth ceases. So, in animals, the formative vessels, when the supply is abundant, appropriate what they can use, and the remainder which has been taken in is carried off by the excretory vessel. In animals the stage of growth is continued one, two or many years. In perennial plants it is annually renewed and annually ceases for a succession of years.

Both in plants and animals, the process of growth goes on until the individual attains certain limits, when it ceases. Why the process is thus confined I know not. Why the germ of one plant is developed in successive growths for centuries, until it reaches a gigantic size, and that of another completes its development in a few weeks or days, and only reaches a size so minute that it is scarcely visible to the naked eye, I know not. I can only say that it is in obedience to a law impressed on its constitution.

Thus I have said a few things about the growth of plants, which is one department of vegetable physiology, but have scarcely begun to discuss the subject. It is a subject of great interest, and has relations with all animate and inanimate nature. By its study we are strikingly taught the wisdom and skill of the Creator, and our entire dependence upon his power and goodness. J. R.

Concord, Mass., July, 1867.

For the New England Farmer.

NOTES ON THE CONNECTICUT VALLEY.---No. V.

Barns and Out-Buildings.

This section presents no exceptions to most others of our country in the location and character of the barns and other out-buildings of the farm.

In a majority of cases, it would appear as if *chance*, and not forecast, decided the question of their position, and that adversely to the best interests of the farmer and the farm. Most of those where some plan appears to have been observed, are open to objections in several particulars. It is not to be expected that all men will be suited with the same style of house and surroundings, neither is it desirable. If this were the case, we should see a sameness that would be wearisome to us. The cheapest of buildings, whatever their uses, are susceptible of tasteful constructi n. Their proper location is a very important matter. Health, wealth, comfort and convenience are to be consulted.

Most men have been more or less influenced, when locating a new house, by the position of

the old buildings. Want of means, no doubt, in many cases prevent a radical change. We will assume the house to be a fixture, and consequently that the out-buildings must be *adapted* to it, and to the demands of the farm. On every hand we see barns and other out-buildings quite too near, and often in front of the dwelling. Prevailing winds are also disregarded, as well as the liability of having the odors of the barnyard and pigpen wafted to the dwelling. True, it is desirable for New England farmers to have their barns not far from their houses, and also to have them sheltered as much as possible from driving winds, so as to make the yards comfortable for stock during the winter. Such locations make a saving in the consumption of feed not to be overlooked. If there are no trees to do this, plant them. A few years—less than most think—if they are properly cared for, will give a good shelter, which, when once possessed, will be highly prized.

When a boy, on my father's farm, in the most stormy and cold weather, I often had to go a fourth of a mile, facing the north wind, to a barn exposed on all sides to the winds, without a tree to break their force. I pity the boys who are now obliged to do the same thing, and commisserate the poor brutes under their care, which, as soon as they pass from the shelter of the barn, are exposed to the full sweep of these cutting winds.

Diversity of opinion prevails with those who give us their preferences as to the internal arrangement of the barnyard. Some would have it concave, others an inclined plane; the former to hold all that gets into it, the other to drain off all the liquids. Both of these plans are based on the yard being covered with loam, muck, mulch and such material as is supposed to be valuable for composting with the droppings of the cattle. The concave plan secures a mud hole for both man and beast. The inclined plane will not be free from the same evil, and at the same time results in a great waste of valuable manure. I have ever thought the most desirable method was to gather up the droppings and compost them in the barn cellar or sheds, turning on water from the eave-trough if required. I think more value of manure can be thus secured than in either of the foregoing methods. It is also well to mulch the yards, and occasionally gather it up to add to the compost heap.

As to architectural design. If new buildings are to be constructed every one will concede that in a good degree they should conform to that of the house, providing the house is modern, and is to remain permanently. I have seen but one barn (I do not mean gentlemen's stables,) on the Connecticut River, between Hartford and Northampton, in which this idea appears to have been thought of. I know nothing of the interior arrangement of this barn; but the least observation of its exterior carries to the mind a conviction of its fitness to the surroundings. It is really a thing of beauty, and though plain and unostentatious, is yet attractive by its harmony of proportion and adaptedness to its location and surroundings. I hazard nothing in asserting that if the owner of that farm desires to sell it, his barn would be to him a surety of a liberal purchaser. He might expend far more on an ark of a building without beauty, and fail of obtaining as favorable pecuniary results. Such unsightly buildings as most farms are provided with are a great drawback to their money value, as well as a sad marring of the beautiful and appropriate. K. O.

East Windsor, Ct., 1867.

EXTRACTS AND REPLIES.

OSAGE ORANGE.

Will you please inform me whether Osage Orange will grow as far north as Vermont, and if so where I could procure roots or cuttings, and oblige

Shelburne, Vt., July 3, 1867. SUBSCRIBER.

REMARKS.—Our impression is that this hedge plant is not sufficiently hardy for your climate. We remember of seeing a statement that in central Illinois the osage orange was somewhat damaged by frost last winter, although peach trees in the same section were less injured than usual. Still if your place is somewhat protected from frosts by the Lake, we hope you will make an experiment in a small way, for your own satisfaction, and by publishing the result, for the benefit of your fence-ridden brother farmers. The editor of the Albany *Cultivator* says that "with proper care we have never found the least difficulty in forming a perfect hedge. The requisites of success are—1. A dry subsoil, naturally so, or by an underdrain near the line of the hedge. 2. Preventing gaps by transplanting well only perfect plants. 3. Cutting back twice a year at successive heights, so as to form a thick bottom. 4. Keeping the ground well and constantly cultivated with plow or cultivator, at least four or five feet wide, on each side of the hedge, for the first four years." Probably a large share of the failures in hedge-growing result from want of proper cultivation and management. Plants may be obtained of western nurserymen, at six to ten dollars per 1000.

MANAGEMENT OF MUCK—MAKING MANURE.

There is a vast difference in the quality of the various deposits of muck. In some places where it is saturated with water from cold springs, it is of little value, but not wholly worthless. By carting it out and letting it lay in the sun and rain and working it over it becomes worth something; but it needs to go through a state of fermentation. Other and larger muck or peat deposits are more valuable. My muck bed is of the larger class. When I bought the farm where I now live, in 1841, the bed was called worthless. It was an unsightly place, full of old logs and all manner of rough stuff, like thousands of others. I cut three ditches through it; one in the middle, and one on either side. I drained the land gradually, little faster than I wanted the muck for use. The ditches carried off the cold springs and the surface soon be-

came dry and firm enough to support a team, and I have plowed some of it and raised good potatoes and corn thereon; not however without having first taken out a great many loads of hemlock roots, logs, &c. On this meadow the peat is from one to ten feet deep, covering about five acres. When I commenced here I had had no experience with muck, but had it all to learn. I tried it in various ways, and in all cases found some good result from it. For the last fifteen years I have taken but one course with it, and that is, to cart it in the fall into my yards, even it off carefully, and put the stock on through the winter. In the spring as soon as it is thawed the great part of the dung is taken off; the more there is left, however, the better for the muck. After planting, it is put into heaps of considerable size, where it lays until haying, when it is worked over during lowery days, &c., being careful to pulverize it finely. It is then thrown into heaps again. There it will ferment and become like any rotten manure. I let it lay until perhaps the last of September, when it is drawn out on to such parts of the grass land as need it most.

With this management, I find no difficulty in keeping my land in a good state of cultivation. I sell the larger part of my hay, and I think I could sell it all, except enough to keep a team, and still keep my farm in a good state of cultivation. But I would say to all farmers and farmers' boys, work with your hands and keep manuring, for if we should stop manuring we could not live in this country, nor in fact, in any other, but a short time. Keep a hoe and shovel in a handy place, and do not let them rust, but wear them bright by use. Scrape up all refuse vegetable matter about the buildings and roads, and put it in with the hogs. They are a mighty help to make manure. I think that I can make as much worth of manure from ten hogs in a year, as you can from ten oxen in the same time. O. FOSTER.

Tunbridge, Vt., April 7, 1867.

TREE BORERS.

MESSRS. EDITORS:—In glancing over an article in your last issue, July 6th, headed "Tree Borers," I find one or two corrections necessary, to render it valuable to the community. I will briefly enumerate them without further preamble.

First, "The borer" is the popular name given to the larvæ of several kind of insects, not only beetles, but various moths and wood-wasps; as the locust-tree borer, the pear, and the hickory, the peach, and the squash vine borer, even, belong to the moth order, *Lepidoptera*. Pine trees are much injured in the Middle States by a borer which is a bee, *Xylocopa*. Secondly, "*beetles*" are not "*bugs* with *wings* and *hard shells*," unless a *cow* is a *horse* with *legs* and a *tail!* Many bugs have hard shells, and the majority have wings, while numbers of beetles have no wings, and a still larger number have soft shells.

Line 8th. Their *third* period is called the *pupa* state. The first state is that of the egg, the second that of the larva, the third as above, that of the pupa, and the fourth and last that of the imago or adult.

The cocoon is not a condition, or state, but as it were a felted blanket spun or woven by the larvæ of many insects, to enclose and protect them during the pupa state. Few larvæ of butterflies do this, but suspend their pupæ, which are sometimes called chrysalides, by the tail, and frequently also by a girdle about the middle.

At the close of your fifth paragraph. The larva of the oak-pruner beetle does not enter the ground. I am not aware that the larvæ of any of the *Longicornia*, (long-horned beetles, mostly borers,) or *Buprestidæ*, (short-horned beetles, mostly borers,) do so. All pass their preparatory stages in the bodies of the plants on which they feed.

The branch containing the oak-pruner larva or pupa, may by falling to the ground be kept more moist, (a great desideratum by the way) or protected by the snow and fallen leaves from sudden changes of temperature during the winter.

Paragraph seven has one slight typographical error; Bivittata, or "two striped" was the name applied by Thomas Say to this species; its older and more proper name however is *Candida*, meaning white.

With sincere regard, and an earnest wish to assist in furnishing the public with correct information, I am very truly yours.

FRANCIS GREGORY SANBORN.

Rooms of Boston Soc. Nat. Hist., July 8, 1867.

REMARKS.—We thank our friend for his corrections. And while we cheerfully accept his amendments, we must be permitted to say that we are pleased that the keen eye of a thoroughly read naturalist should have discovered so few errors of fact and expression in an article hastily written in a most busy season upon the farm, and for readers who see much more of the operations of borers, beetles, bugs and pruners, than they hear or think of their proper classification, or of the exact terms which the books employ to express the various stages of their wonderful transformation in coming to maturity.

THE SEASON IN MAINE.—FEEDING COLTS.

In our vicinity we have had a very backward spring. Some among us did not commence planting until the very last of May. Others, upon sandy farms, planted as early as usual; but most of the farms in our vicinity have clayey loam, which retains the water longer than most other soils. But, the late spring is followed by a very growing season. Corn planted the 10th of June has come forward finely, and has been hoed the second time. The hay crop promises to be fair, but not abundant. I don't think there will be twice as much as there was last year. It is predicted that July will be a showery month, and if hay is not considerably damaged I shall be mistaken.

Please inform me whether oats, corn or meal should be fed to a colt in the winter after it is a year old in the spring. C. H. W.

Wiseasset, Me., July 8, 1867.

REMARKS.—That depends greatly on the quality of the hay or other fodder which the colt is expected to eat. Where there is plenty of good clover hay, and a few potatoes, we doubt the expediency of feeding much grain. Colts should never be forced with provender, nor stunted for want of nourishing food. They should, however, be kept in a growing, thrifty condition, even if it be necessary to give them a little grain. Will some practical horse raiser answer our correspondent's inquiry more fully.

DRY CLAY AS A DEODORIZER.

I have frequently seen plaster of Paris recommended to spread on manure heaps, put in privies and cess-pools to absorb the gases and deodorize the mass. The objection to the use of plaster is its expense. To use a sufficient quantity to be effectual, would require so large a percentage that when the manure is spread in the field, more than four times as much plaster is used on an acre as is of any benefit. An equally efficient and much cheaper

substitute may be found in common clay, the dust of a travelled road on a clay soil. I have found by experiment that it will neutralize the odor more quickly and effectually than plaster. A few barrels full, saved at the proper time, would last for a year, to be occasionally thrown into a privy, keeping the same sweet, rendering the work of removal comparatively inoffensive, and furnishing a valuable compost for the farm or garden.

I discovered the efficacy of clean clay to purify water several years since. I had occasion to use some water as soft and colorless as could be obtained. I found that alum would remove all the mechanical impurities, but left the water slightly colored, in consequence of passing through swamps some miles up stream. I then mixed with it a small quantity of pure clay; after twenty-four hours the water was as clear as a crystal, and the deposited clay brown as brick dust.

A NEW SUBSCRIBER.

Middlebury, Vt., July 4, 1867.

REMARKS.—If clay cannot be readily obtained, dry muck, soil or even sand will be found quite efficient for ordinary purposes. But it is so *much* work to house a few wheelbarrow loads, or we are so liable to neglect it at the proper season, that few of us keep any thing of the kind on hand, and consequently when a deodorizer is needed, we are compelled to buy plaster as a penalty for our improvidence.

IMPROPERLY CURED HAY.

Much has been said and written about cutting hay in the forenoon, and putting it in the barn the same day. This is an easy practice for filling the barn, and will answer very well if your object is to have your cattle all poor in the spring, and your horses die with the heaves. I do know, from fifty years' experience on a farm, that the very best English grass, managed in the above way, is not worth so much as good meadow hay well cured. I do know that English grass cut in its prime, say when herds grass and red top are full in the blossom, needs the farmer's best attention and a drying sun for two days to prepare it to mow away in the barn.

Some farmers may think that by putting their hay in the barn slack dried, that they will get more weight in the spring; but this is a great mistake. Hay put into the barn imperfectly dried, will heat and sweat, and lose more weight than by fair drying in the sun and air. In the spring slack dried hay will smell rotten or musty, while hay dried as it should be, will, if a forkful is thrown out doors of a dewy night, smell the next morning like new hay in the cock on the Fourth of July. Such hay as this will fatten your horse, give your ox strength to draw the plough, and make your cows fill the pail with milk.

If the farmers in New York are in the practice of cutting their hay in the forenoon, and mowing it away in the afternoon of the same day, instead of wondering that they are troubled with abortion in their cows, I wonder at their having any live calves at all.

ASA G. SHELDON.

Wilmington, Mass., June 25, 1867.

RANK OF FARMERS.

Brother farmers, who feel as though your occupation was considered low by men in other walks of life, and yourself slighted, will you please stop a moment and see what you have done or are doing to entitle you to a more worthy consideration. If your only object in tilling the soil is to procure food and clothing, your occupation is not above the ox grazing the field for his food. If you own a good house, purchased with your money, you are not entitled to more credit for it, than the purchaser of a painting. By others' skill the house and painting have been produced, and you are to be honored only for your taste in selecting the works of another. Make an effort to not only live, but to produce domestic animals of all kinds kept by you, that shall not only have a market value, but which shall be as great proof of your skill as a fine painting is of the skill of the artist. Make both your efforts and result as public as they do and due honor will be accredited. Let farmers as a class do this, and their pursuits will rank among the highest; faling to do that do we not deserve the low place we occupy? ZENAS.

New Hampshire, 1867.

GOOD HENS AND GOOD PRICES.

Having noticed several reports of profitable fowls in your valuable paper, I may say that I have eight hens of the white capped Black Poland variety, which I think have been profitable. They have laid from the first of March to the first of June, this year, thirty-one dozen eggs which I have sold for $1 a dozen at the house.

E. HAYWARD.

Danvers, Mass., June 17, 1867.

SCATTERING RYE ON OAT LAND.

I frequently notice at this time of the year scattering spears of rye, growing on land which the year before was seeded down with oats. Will some one tell me how it gets there?

Royalton, Vt. July 1, 1867. J. G. BENNETT.

THE MYRICK HORSE.

Can I be informed through the FARMER where the Stallion Sherman Blackhawk, well known as the North or Myrick horse, may be found the present season, terms of service, &c.

West Randolph, Vt. June 25, 1867. JACK.

REMARKS.—We are informed that this horse is now owned by Mr. Bailey of Portland, Me., and that he is regarded as a remarkable fine animal by the horse fanciers of that section, but we cannot answer any of the other queries of our correspondent.

USE OF SUPERPHOSPHATE OF LIME.

A constant reader of the NEW ENGLAND FARMER, wishes to use *superphosphate of lime* on good ground, where winter rye is to be sown, and would like to have some one, who has had experience in it, tell him, through the columns of your paper, how *much* to use and *how* to use it.

A SUBSCRIBER.

Worcester, Mass., June 17, 1867.

REMARKS.—Do not use less than 300 pounds per acre—400 will be better—and work it in when the grain is harrowed in.

CHESS.—CURCULIO.

As the year has closed for the FARMER, I enclose the money for another year. The paper is to my house a constant source of instruction and comfort. We should not know how to do without it.

As it is now quite customary for those who take the FARMER, to make inquiries concerning the farming interest, I take the liberty, as a small farmer, to do the same. I have a piece of winter wheat, sown the last day of August, that came up finely, grew well through the fall, and came out looking well in the spring. I flattered myself I should get a fine crop; but when it headed out it

was full one-half chess, the largest proportion of any piece I have ever raised. If you or any of the readers of the FARMER, can assign any sure preventive, so we can rid ourselves of the evil, a great favor will be conferred on me as well as the public in general.

Also a cure for the curculio is greatly wanted. I have a few fine trees that blossomed full, set the fruit well, and I flattered myself I should have a fine crop, but they are all gone. If some one will be kind enough to find a sure remedy, and make it known it will be a great favor.

A SUBSCRIBER.

Shoreham, Vt., July 7, 1867.

REMARKS.—These are hard nuts to crack, and a great many wiser heads than ours have failed in the attempt, after cracking their own fingers badly. Column after column, and page after page, of our agricultural publications have been filled by practical farmers and theoretical writers on the chess question, and still it is far from being settled in the minds of many. The amount of foul seed which we have seen separated by Mr. Adams' improved winnowing mills, from what was called clean seed, is one of the facts which incline us to the opinion that chess, like other plants, is brought forth "after his kind." If this theory is correct, the seed of the chess which grows in the field of a Subscriber. was either sown with the wheat, or, like that of white clover, it "sprang from the ground."

In this connection we copy from the *Country Gentleman* the following inquiry and answer.

I have a piece of wheat, sowed last fall on rich, heavy, clay soil. I find it full half *chess*, growing with the wheat on the same roots. I send you a sample. I don't have to look to get it. It seems to be all so. I have often read of wheat turning to chess but have never believed it until now. Can you give an explanation? P. P. S. *Greenfield, Mass.* [A very little examination will show our correspondent that, though the wheat and chess stalks in this case were growing up so closely together that their roots are somewhat intertwined, each has its own distinct and separate root, just as plainly as if they had grown a rod or more apart. With a very little care the stalks may be separated without breaking a fibre, which certainly does not look to us as though they grew "on the same roots," but rather as if the little chess seeds had been deposited with the seed wheat, and in very near conjunction to the kernels of the latter.]

In relation to the curculio, we have repeatedly published all that we know, if not a little more. We refer our correspondent to the Weekly FARMER of June 15, for an article of more than a column, on the habits of this little fruit killer, and on the best known remedies for its ravages.

BIRDS AND PEAS.

Will you inform me and my neighbors, through the columns of your very valuable paper, if there is any way to protect peas from the ravages of the birds; and what kind of birds it is that are so bold and greedy? They have taken *every early pea*, and promise to be thus faithful with the later crop. Please give us a remedy against so annoying an evil, and oblige your correspondent.

July 8, 1867. MONTAQUE.

REMARKS.—Kill a large cat, skin her, cover the inside of the skin with soap that has arsenic in it, to prevent it from decomposing, stuff the skin, put glass eyes into the eye-holes, and set her up as crouching and stealthy as you ever saw a cat that was watching a bird. Put her up among the pea vines, and twice a week change her position; if that does not keep off the birds, we know of nothing that will but powder and shot!

The depredators are, mainly, the gold-robin, (Baltimore oriole,) the common robin and cedar bird. The first is the most destructive. They all, however, leave us a fair share of the crop. We must plant liberally so as to compensate them for their music and other benefits which they confer upon us.

Doves are very destructive to peas, when they are only an inch or two high, by working about them with their bills and pulling them up.

MANCHESTER, MASS.

This is one of the quiet towns which nestle among the rocks of our iron-bound coast. The business of the people of this place was formerly almost wholly fishing. About fifty years ago a cabinet shop or manufactory was opened here, and the business has gradually increased, until it has become the leading interest of the people of the place, who now number about sixteen hundred. Soft wood lumber is obtained from Maine and New Hampshire, and hard wood from the West. The business appears to be reasonably prosperous, and the prospect for the future good.

Between the rocks which occupy a large part of the surface, the soil appears to be very good; and here and there are to be seen the gardens and orchards of some of the more enterprising inhabitants. Mr. J. Godsoe, who has been a constant reader of the FARMER, for quite a number of years, has set a very good example of what enterprise and industry can do to make a pleasant home on this rocky coast. In 1831, he began where he now lives, then a waste piece of land, with no neighbors. Now there is quite a street, lined with good houses and gardens. Mr. Godsoe has a very fine apple orchard which looks quite thrifty, although this year there will not be a large crop. Mr. G. has improved his ground so that he has a fine garden, with the choicest variety of grapes and other fruits. He has also a fine grapery with forty vines in it which presented a most neat and pleasant appearance, as the vines were very flourishing. Mr. G. takes great pleasure in the care of his grapery, and he may very justly feel proud of it. His house is most pleasantly situated, and his buildings are comfortable and commodious.

Mr. Killem has recently built a new grapery, 40 by 28 feet, and costing about $800. It is constructed in the most thorough manner and of the best materials, the glass being from England.

W.

OLD PASTURES.

Much has been said and written about old pastures. I have one which has not been plowed for over thirty years. I commenced on it last spring by removing the stones and laying them as I drew them into wall; took extra pains in plowing and harrowing, and sowed 1½ bushels of India wheat to the acre; harrowed again, then put on 200 pounds of plaster and the same of phosphate of lime to the acre. When the wheat arrives to a certain growth I intend to roll it, plow it in and stock it this fall, say the last of August or the first of September.

Now I want to know what kind or kinds of grass seed I had better sow. Clover does well here for about two years, then it disappears. Had I better

sow Clover, Timothy, Hungarian and Fowl Meadow, and if so, how much of each to the acre? I wish to stock heavy and cut the grass for one or two years, then turn it into pasture again and see if it pays. I will at some future time give you and your readers of the good old FARMER the cost per acre and the gain by so doing. The land is a sandy loam, warm, quick soil, with an east slope but too far from my buildings to manure with barn manure. Let me hear from you through the columns of the FARMER. A SUBSCRIBER.

Peacham, Vt., July, 1867.

REMARKS.—Sow 8 to 10 quarts of timothy seed, 1½ to 2 bushels of red top, and add to these two quarts of Kentucky blue grass, per acre. This latter will not add materially to the crops of hay you may take off, but will come in and make a permanent pasture grass. We shall be glad to receive the result of your experiments.

WILD GRASSES.

I wish to know the names of these two grasses, and their value as grasses for hay, and if they do well on wet or dry land, and if they have to be seeded in the spring; and which is the best grass, one that has got a beard on the leaf or the other?

Blackstone, Mass., July, 1867. A SUBSCRIBER.

REMARKS.—The grass with the broad leaf is probably the *blue joint*, and is considered a valuable grass when cut early—that is, while in bloom. The other is undoubtedly a valuable grass. Both are wild and probably do not require sowing or culture.

CROPS IN WESTERN VIRGINIA.

One of our subscribers in Hardy county, Western Virginia, in remitting his subscription for the weekly FARMER, communicates the following interesting facts in relation to the crops, the season, &c., in that section:—

I have not sold my last year's tobacco crop. This coming winter I shall try to work it up into cigars. I have out another acre of tobacco, eight of corn, one of cane, and one of potatoes. It has been too wet for corn, cane and tobacco. My corn is turning red on this account. There will be, I fear, a great deal of wheat injured in the shock, if it continues wet a few days longer. There is a large quantity of corn planted in this valley (Capon). The following are some of our current prices:—wheat flour, 6 cents per pound; corn $1 per bushel; butter 12½ cents per pound; eggs 10 cents per dozen; bacon 10 cents per pound.

Hardy County, W. Va., July 9, 1867.

FINE STEERS, AND CALVES.

While at West Fitchburg, Mass., the other day, I saw some fine cattle at the farm of E. D. Works. One pair of yearling Durham steers particularly attracted my attention. They were well matched, and weighed 1800 lbs. He expects they will weigh 2000 by Fair time. I noticed a pair of native steers of the same age, which though a fine pair were not as large as the other. Mr. Works takes a laudable interest in the improvement of his stock, and showed me a pair of four-year-olds which, considering that they were kept mostly on meadow hay until the past winter, were very creditable animals, and weigh 3000 lbs.

On passing the farm of Jos. Whitney, in Sterling, I saw a pair of calves, which were larger and better than any I have seen this season. These were actually larger than three-fourths of the yearlings to be seen in our pastures. I did not learn their weight. Too many farmers sell their best and most promising calves for Brighton, and then depend on the little dwarfs from Canada to fill their places. B. D. W.

AGRICULTURAL ITEMS.

—To save time in looking for lost pruning knives and other small garden tools, a bright red paint is recommended for the handles.

—If you would have your daughter's husband pleased with his breakfast, teach her to get a breakfast.

—In England, land is rented, first to the gentleman farmer, next to the managing farmer, who employs poor laborers.

—In long summer days, between the Atlantic and Pacific coast, our farmers have daylight for 21 hours and 40 minutes.

—The States of the Pacific coast are as populous and as wealthy as were the whole Colonies in the time of the Revolution.

—Somebody has calculated that the time and strength wasted in one year's churning would build a railroad across the continent.

—Secretary Klippart, of Ohio, has ascertained that there are about fifty different draining-tile manufacturies in Ohio.

—Air slacked lime sprinkled over currant bushes will prove a perfect preventive to the ravages of the currant worm. So says a correspondent of the *Rural New Yorker*.

—A pound of copperas dissolved in four gallons of water and poured over the sink three or four times will, it is said, completely destroy all offensive odor.

—Governor Crawford, of Kansas, is building a stone fence around his farm, the entire length of which when finished will be one thousand two hundred and eighty rods.

—The *Canada Farmer* publishes a list of town, county and district agricultural societies, in Canada West, numbering three hundred and twenty-nine.

—A correspondent of the *Country Gentleman* made a clean sweep of the currant worm, which was destroying his currant and gooseberry bushes, by a thorough dusting of a mixture of equal parts of plaster, wood ashes and slacked lime.

—The investigation into the causes of abortion in cows, for which an appropriation was made by the late legislature of New York, has been commenced by Prof. John C. Dalton, aided by scientific assistants.

—At a recent meeting of the Little Falls Farmers' Club, Geo. W. Davis gave the results of a comparison of cost of making cheese at factories and in private dairies. The calculation was based on thirty cows, and the result was as $271.00 to

$225.60—or $45.40 in favor of the factory in point of cost of making. In marketing, the factory made cheese had an advantage of from one to two cents per pound.

—At a sheep shearing festival in Genesee county, N. Y., it was stated that the sheep of that section will shear double the cleansed wool in 1867, that they did in 1830—a gain unparalleled in any other department of farming.

—A report that the rinderpest had made its appearance at Coxsackie, N. Y., has caused great excitement in that section. A careful examination shows that the deaths were caused by pleuro pneumonia.

—A correspondent of the *Country Gentleman* thinks posts and other lumber may be better seasoned by ten or twelve hours fire drying, with proper apparatus, than by two years exposure to the air at ordinary temperatures.

—The fact that only about one tree in a hundred which are set out, stands the test and becomes useful, is mentioned by the Utica *Herald* as one reason of the steadily increasing business of the great nurseries of the country.

—To preserve peas from bugs, a correspondent of the *Country Gentleman* puts the peas into wide-mouthed bottles or jars, with about half an ounce of gum camphor to each gallon of peas, and corks tight.

—There is in Randolph, Vt., a Blackhawk stud colt that at one year and seven days old was 16½ hands (66 inches) high at withers or rump—having grown over a half inch per week ever since he was born.

—The California *Farmer* says that oranges much superior in flavor to those grown upon the islands, are being plentifully produced in many sections of that State. The business promises to be a highly remunerative one.

—The York New *Horticulturist* says that in July as the lengthening growth of suckers around apple and other fruit trees is closed, nearly all the vitality is laid up in the leaves and stems, and they may be removed with little prospect of their ever again sprouting.

—Fanny Fern says, to her eye, no statue that the rich man places ostentatiously in his window, is to be compared to the little expectant face pressing against the window pane, watching for father, when his day's work is done.

—The Dutch Government has ordered 7000 head of cattle to be shot and buried in a single week, in Holland, to prevent the spread of the cattle disease. The owners resisted in some instances, and two men were killed and two wounded by the soldiers.

—At a late farmers' talk in England on steam cultivation, one gentleman spoke of two engines which took prizes where they were respectively exhibited, and yet both proved failures in practice, though each was bought by a Lord, who had every facility for their proper use.

—Glass can be cut without a diamond by taking an old, three-cornered file, break it so as to have sharp corners, and with a straight-edge draw the sharpest corner where you would have the glass cut; then turn the glass over and do the same on the other side. With a little practice it is said glass can be cut quite well in this way.

—A contrivance for protecting horses from the effects of heat, was recently exhibited to the New York Farmers' Club, by C. Elvęna, of California. It consists of a cloth or pad, on which a cup for holding water is placed between the ears, and is so constructed that a little water passes out at a time and keeps the head moist. Certificates were read from Gens. Meigs and Grant.

—Boys that ride horses to plow corn are advised by the *Maine Farmer* to remember that a horse does nearly all the stepping when he turns with the fore feet. He makes use of the hind feet chiefly as a pivot. Now just take care of his fore feet and keep them away from the hills and pay no attention to his hind feet and you will succeed nicely.

—A correspondent of the *Rural New Yorker* says that he has known a horse that went for twelve months on three legs, from ringbone, made perfectly sound by the application, once a day, of an ointment composed of half an ounce of red precipitate; half ounce blue stone; half a pint of turpentine, thoroughly mixed. Keep the hoof greased.

—There is an old farmer in Northern Ohio who gets up at daylight, builds a fire, puts on the teakettle, dusts the furniture, goes to the stable and feeds the horses, then calls up the folks. Having a taste for reading, he goes to a room where he keeps his books, builds a fire, sweeps out, and reads till breakfast time. This is Ben Wade, Vice President of the United States.

—Hon. Marshall P. Wilder, in a letter dated Paris, May 31, says, last week we had some frost in this vicinity. Much has been said of the incompleteness of the American Department. For myself I am disposed to speak favorably of it, and although there may not be so much fancy, and perhaps taste, in the arrangement, I believe the record, when the prizes are awarded, will redound to the honor of the American Republic.

—The following treatment of a kicking cow is recommended by C. L. Hubbs, of Oronoco, Min., in a letter to the New York Farmers' Club. First, tie her by the head; then take a rope the size of a clothes line, and place it around the cow just back of the fore legs and tie loosely; then put in a small stick; now commence milking, and when the cow kicks twist up the rope, and renew the twisting process every time she kicks. You will soon have it tight enough so that she cannot raise her hind foot more than four inches from the ground; when

she stands quiet, loosen up a little. A few doses of this will cure a cow so well that she may be milked anywhere in the yard without trouble.

—Whitewash, as ordinarily made, rubs off the walls after it becomes dry, soling clothes and everything coming in contact with it. This may be obviated, it is said, by slaking the lime in boiling water, stirring it meanwhile, and then applying, after dissolving in water, white vitriol (sulphate of zinc) in the proportion of four pounds to a barrel of whitewash, making it the consistency of rich milk. A pound of white salt should be thrown into it.

—At the Agricultural College at Cirencester, England, a field of ten acres of wheat, in a very forward state, was divided into two equal parts at the first of April and one hundred ewes with lambs put on one portion, and left there sixteen days, in which time they had eaten the wheat close to the ground. These five acres were harvested four days after the other part of the field, and appeared fully equal to the rest, but did not yield quite so much. The difference was made up by the value of the feed of the sheep.

—One of the great English landlords that own whole neighborhoods and villages, and who has employed steam plows for seven years, stated at a late public meeting that he finds that the men who are connected with the steam plow, have become a species of aristocracy among their fellows, that they pride themselves on their position, and are educating their sons for the same profession. Hence he calls attention to the fact that steam is to effect a revolution in the habits, manners, and morals of the people, as well as in the tillage of the land.

CONTENTMENT.

For me, could envy enter in my sphere,
Which of all human taint is clean and quit,
I well might harbor it
When I behold the peasant at his toil.
Guiding his team, untroubled, free from fear,
He leaves his perfect furrow as he goes,
And gives his field repose
From thorns and tares and weeds that vex the soil.
Thereto he labors, and without turmoil
Entrusts his work to God, content if so
Such guerdon from it grow,
That in that year his family shall live;
Nor care nor thought to other things will give.
—Song of Fortune, by Guido Cavalcanti, an early Italian poet.

—Melilot clover (*Melilotus Leucantha*) is recommended by an Illinois correspondent of the New York Farmers' Club, as the best plant for bee pastures. The plant grows rapidly, often attaining the height of from six to eight feet, and shades the ground completely. The tap root grows to considerable length, and is seldom out of reach of moisture. *Early frosts* injure the blossoms but little, and even when wholly destroyed, the plant is again in full bloom in the course of three or four days. Bees can work on the blossom in this latitude, thirty miles west of Chicago, one hundred days at least, which is time enough to give every good, strong hive of bees a surplus of fifty pounds. Ten acres of this clover, it is thought, will give full employment to an apiary of one hundred families.

—Speaking of two adjoining farms, one of which was well cultivated, every field being clean and in fine condition, the other filled with thistles, whiteweed, thoroughwort, &c., a correspondent of the Ohio *Farmer* says: If I keep a dog and he jumps over my weed-growing neighbor's fence and kills a half starved sheep, I am accountable for the damage, and the sheep owner is looked upon as a deeply injured person; while at the very time, he is seeding my fields with the most noxious weeds that will cost me time and money to eradicate, yet I have no redress.

—M. W. Leland, of Rochester, Minn., informs the New York Farmers' Club that the bee has no more to do with the mechanical construction of its comb than has a fowl with its eggs. Bee comb is the oil extract of honey, and instead of its being mechanically made it grows (!) In well-fed and well-conditioned swarms, where they remain in contact for any length of time, the temperature being sufficiently high, comb commences to grow, and the bees cannot help it. It is the perspiration or secretion of this oil from the bee which cools and is naturally formed into comb cells, and the size of those cells depend on the linking of the bees, whether at the first or second joint.

BUYING AND MANUFACTURING WOOL.

Mr. William Hayden, an experienced wool manufacturer of Auburn, N. Y., attended the Wool Growers' Meeting at Rochester, last May, and on being called upon made some very sensible remarks upon the wool trade. In consequence of these remarks wool growers and others have since addressed more letters of inquiry to him for further information than he has time to answer individually. He therefore condenses his replies and explanations into an article for the *Rural New Yorker*. We think he demonstrates very conclusively the injustice of any uniform price, or any fixed rate of shrinkage for unwashed wool. Though all his views may not be endorsed by wool growers, we think his communication will be read with interest. The resolutions referred to were published in the Weekly FARMER of June 8th, and in the Monthly for July.

"Wool buyers are asking me why I do not endorse the resolutions adopted at their convention held in Rochester, April 19th, 1867. To them I would say that I consider some of their suggestions good, while others are entirely superfluous, and such as no buyer or seller will adhere to longer than for his interest. If Mr. A. or B., although a good judge

of wool and careful buyer, can make more money by the purchase of a lot of wool with strings forty times around each fleece, than he can by the purchase of another lot with strings only twice around, he will prefer to take the lot with the excess of twine, all resolutions to the contrary notwithstanding. On the other hand, if Mr. Farmer thinks that his wool will bring him more without strings, he will so put it in the market.

In regard to unwashed wool, one-third deduction is as near what it should be on the average as any figure; but I hold that no fixed rule can be made that will do justice to all parties,—for while A. may have wool that should have a deduction of at least one-half made on it, owing to an excess of yolk and dirt, his neighbor B. may have so kept his sheep that a deduction of one-fourth might be more than should be made. Every buyer should be a good judge enough of wool to make his own rules to govern his purchases. Many, in allusion to a statement made by me at the Auburn meeting, have asked why is wool from sections where the water is soft cleaner than that from limestone or hard water sections? This question I might answer by asking another, (as I only referred to washed wool,) Why is soft water better than hard for any washing purpose? In answer to inquiries why wool can, as I stated, be purchased in Michigan to better advantage to the manufacturer than here and in some other sections, I wish only to be understood as referring to buyers who are well posted and who discriminate between a good and bad conditioned article. Wool there is all taken to market before being sold, and he who discriminates most gets the best, while an indifferent buyer gets what the first does not want, at one or two cents per pound less, while the actual difference is from three to eight cents per pound. Wool raised on sandy soils, like those of nearly the whole of Michigan, is generally more free from animal oil than that which is grown on heavy or clay lands. I have also found that wool raised on the large prairies of Illinois has less strength than Michigan, Ohio and Eastern State wools. I will not now try to explain why this is so, but leave the question for some future occasion, or to some one more able than myself to offer the correct solution. I will only say that it is a fact which I have noticed in an experience of more than twenty-five years in manufacturing. Why should tags and unwashed, dead wool not be put inside of fleeces? For several reasons; among which is the one that the purchaser can form but a poor idea of what he is buying, as all is hid from view and he is obliged to depend entirely upon information obtained from the seller as to the amount thus put in. I find such information is not at all times to be depended upon; and when detected, he claims that he knows nothing about it, and charges all upon the shearer, the boys, or the hired man.

Old wool is worth more than new for some reasons, among which are the following: It takes color much better, especially where bright and fancy dyes are required; it works better and wastes less in carding; and it makes firmer cloth than can be made from the same quality of new wool. If two or three years old it is all the better.

Several have made inquiries about the use of shoddy, of what and into what it is manufactured. Although I never owned or used a pound of it, I have seen much of it made and used. Shoddy is made from old rags which are torn by machinery for that purpose, (not, as some suppose, of Yankee origin,) and are thus brought back to wool much reduced in length and strength. It is mixed with wool before carding, and thus becomes thoroughly incorporated with the fabric, and must of course lessen the value of cloth for service in proportion to the amount used. Another article much used in the adulteration of cloth, and the use of which I consider worse on the part of the manufacturer than the stuffing of fleeces with dead wool by the farmer, is termed shearings. It is made in all factories, and is largely imported from Germany and France. It is felted into cloth while being fulled, and is merely an outside covering which is soon found at the lower part of the garment, between the outside and the lining. This is supposed by many to be shoddy, but is much worse and can be detected by rubbing the cloth over white paper."

TALK ON WORK, HEAT AND HEALTH.

Workers in the fields—strong men and sturdy boys, toiling beneath a blazing sun, and exposed to rain and chill—let's have a talk together about work and health. Not a *fussy* talk, like a set of fidgety nervous fellows, afraid to stand up square lest some of the inside works give out; but just a word of practical common sense. (Common sense, by the way, is rather *un*common.)

There's a good deal of work to be done in the six months ahead that can't be got round, or pushed aside, unless you like sheriffs and red flags. If the old farm is to be kept, and to gain in value, this work ahead must be met and done up. For three months we shall have some *awful* hot days, with burning sun and sultry air, "muggy," as they used to say, "down East." Thunder storms will come up suddenly, wetting you to the skin, and with raw winds that check perspiration sooner than is healthy; and a damp, chill day, now and then, in between these *scorchers*, to say nothing of fogs and dews. But this work is to be put through, blow high or low, and it's a good plan to start and go on in such fashion as to hold out strong and come through sound and bright.

It may be well to "take an account of stock," as merchants say,—we mean stock of bone and

muscle, and nerve, and will-power. Every sensible man knows about what he can do, and not break or weaken his powers; settle that, and then *don't over-do*. Many a man (and more boys) just wrecks himself needlessly in ten minutes, and is never the man again he was before. When you feel you are up to your highest mark, *stop;* and stop before you get there, save in rare emergencies. It's well to feel that you have a reserve force, and could "let out another link."

Look out for the sun. He's a fiery fellow, and sometimes when your system may lack positiveness from overwork, he'll send a hot shaft right through you. Don't be careless or foolhardy, that's all. The "boys in blue" all say that the best soldiers took no useless risks, and were therefore fresh and right when the sharp work was to be done.

If you have a feeling come over you that the heat is *going through*, take to the shade without any foolish shame, for the hardiest sometimes falter, and far better one hour's care than months or years of weakness from sun-s'roke—*coup de soleil*, as the French say. Keep a firm will, for that has great power over the body; and keep the system in a positive condition, with an overplus of vital force to meet and master heat, or cold, or work, by rational care in your habits: but, when you feel that the vital forces are too weak, or too much taxed, yield for the moment and recuperate.

Don't drink too much, no matter what it is, but rather a little, often, slow, rinsing the mouth well. Be careful about ice-water. Some ginger and sugar or molasses is good in your water. Home-brewed ale of the best sort may help. As for spirits, it's too fiery, in whatever shape, gets up too much fever, too high pressure and makes the boiler burst. We've worked in hay fields when sealing wax would be soft as putty, and mowed away hay under the barn roof where it was hotter than any spot on this earth, and went through it without the *ardent*.

Beware of getting hot and tired and standing in a chill draft of air, especially if it comes on your back. That heat and work has lessened your vitality, and put you in negative condition, so that outer forces control you easier, perspiration is checked and sad mischief done before you think. Keep your face to the wind when you stop to rest, for the resistant vital forces emanate from the front more than the rear, and he is a wise as well as a brave man who faces exposure as well as danger.

Don't bolt a hearty meal in hot haste and rush out to your work, but get a little rested, then eat moderately, yet enough, and go to work fresh. Dyspepsia and its kindred horrors come often from eating full meals with the system overtaxed and heated, and no vital power left for digestion. Keep cool; the more to be done the more need of self-possession, that you may be master of the situation.

Don't eat heaps of meat and drink gallons of rank coffee and strong tea, with a blind notion that you must have hearty food. Your bread or beans, pound for pound, has more nutriment than your beef, and the water don't clog up the system like this black coffee, or rack the nerves like strong tea.

Meat has more stimulus than bread, and a share of this is well, but not in excess. Eat meat, vegetables, fruits, &c., and drink moderately. Keep the system open and all evacuations easy and natural, and save fevers and congestions. Take less meat in very hot weather. Judge for yourselves, but keep all firm, and trim, and cool, and open, in the internal department, and you'll be fit for a good, long pull.

Bathe often, *but never when hot or tired.* At night a hand-bath all over, if not too tired, and in the morning you are fresh, and it is always safe. It helps greatly through the heated season.

All this, and much more in the same way that you will all think of, can be done, and avoided, sensibly, quietly, and without fidgeting, and rely on it, will help through all the exposure, make work a welcome task, and land most of you, strong in body and clear in mind, on the cool edge of next winter's snow banks.—*Rural New Yorker.*

ECONOMIZATION OF WASTE MANURE.

The following account of the modes which have been adopted in Paris to promote the health of the people, and to utilize night soil, &c., for manurial purposes, is communicated to the Chicago *Farmer*, by its intelligent correspondent at the great Exposition.

All the night soil and refuse matter of this great city were formerly cast into the sewers and forced into the river Seine, rendering alike unhealthy the exhalations from the surface of the streets, and the waters of the river —an entire waste, and a source of disease. Succeeding this, up to the year 1850, all this refuse matter was kept from the sewers and conveyed to *Parc de Chaumont*, where it was converted into *poudrette* and made use of as manure; but this becoming too great a nuisance, it was done away with, and until three years ago, all thrown into an immense subterranean tunnel, ten kilometres in length, and forced by means of steam pumps to the forest of Bondy, about four miles distant from any human habitation. At present the offensive matter from about fifty thousand houses out of the seventy thousand of Paris, is conveyed to this point. It is conveyed to the tunnel by seavengers, in hogsheads; about seven thousand hogsheads per day are transported. Previously to being manufactured into *poudrette*, it is all raked over by hand,

the men taking out all jewels and other valuables it may contain. The men, about two hundred in number, thus engaged, gain, each, about four francs or eighty cents per day, which, I believe, is all the compensation they obtain.

A large amount of the night soil from the balance of the houses of the city, including generally what is called "New Paris," is manufactured within the city limits—yes, even in this cleanly city, where not even a sheep can be slaughtered without subjecting the butcher to severe punishment; and, in reality, it is no nuisance; its odor is not perceptible twenty yards away. The refuse is taken by scavengers, the owners of houses paying them for the work, in closely-covered, sheet-iron jars placed in the *cabinets* of the houses, and conveyed to this factory. Here the solid is separated from the liquid matter; the solid part is thoroughly mixed with lime slaked by 50 per cent. of its own weight of liquid (urine is preferred to water for this purpose); a sort of basin is formed by this pulverized lime, into which the jars are emptied, and the work of mixing commenced. In five minutes the work is completed, the offensive odor gone, and the manure dry and ready for shipment. The process is patented on the continent and in the United States.

The product finds a ready market. It is considered especially valuable for all root crops, and particularly for beets. For wheat and the small grains generally, it is not directly applied. These crops follow beets manured the previous year, with good results. It is applied, it is said, at the rate of about fifty bushels per acre. The average amount produced at this establishment is about five hundred bushels per day, or 150,000 bushels per year of say 300 working days.

It has been estimated that if all the waste of Paris could be thus utilized, it alone could fertilize nearly 300,000 acres of land, and that all the cities and towns of France could keep up to the maximum of fertility over 8,000,000 of acres.

DAIRY COWS.

Select and keep the *very best only*. A good cow, well kept, is profitable. Poor cows are unprofitable. My own experience in selecting cows for dairying or furnishing milk to sell, is to select good wedge-shaped animals, heavy hind quarters and tapering towards the head, with light heads, long faces, and usually small wax-colored horns; also, slim necks, small tails, capacious udders, running well forward, milk veins large, teats good size, rather long and set well apart. I care not for breed or color. It is all humbug for *dairy profit*. (*Breeding stock* is another story.) I think it would generally pay well for large farmers, say those who keep from twenty to thirty cows, to raise some five to eight or so of their best heifer calves each year, from their very best cows, and from a bull which you know to be from a good milking family. By so doing, and by selecting the best only to keep from the heifers you raise, (when they have their first calf,) you will in a few years have a better herd, and a better paying herd of cows than you will be able to buy. As to color, I care but little about it, so long as a cow has a good yellow skin, a stripped hoof and a wax-colored horn. If her hair is soft and silky, I care but little about the color of it. I have noticed but little, if any, difference in the quality of milk between "Old Brindle', and "Little Red," while the "Roan cow" makes as good a calf as either, and holds her milk as late in the fall. The boys think "Old Topsy," the *brown* cow, will beat the whole flock; but for the "season through," I should as readily bet on "Annie Laurie," the pied cow. So you see that color is all a fancy, save in the color of the teats. I should prefer colored to white, as being less likely to chap or crack.

As to the profits of a cow, much depends on the milker. Some men are rank poison to stock any way; and such should never attempt to milk. A good milker will always treat the cow gently and pleasantly, milk fast and tell or listen to no stories while milking, and be sure to get the last drop in the udder every time. I consider a cow in her prime (all things considered) from five to ten years old. Some cows hold out much better than others, as with men and horses; and are really as young to all intents and purposes at twelve years, as others are at nine or ten. Never keep a cow through the winter after she gets to going down hill, or kill a superior cow on account of her age, if her teeth are good, and she is all right, without any signs of deterioration. Cows should be milked regularly, and by steady milkers.—*John Dimon, Pomfret. Ct., in Farm and Fireside.*

NO PRESENT RESULTS FROM THE NEW WOOL TARIFF.

The recent tariff has not yet advanced the prices of wool, and the reason is obvious. From the time of the first concerted action of the manufacturers and wool-growers for a revision of the tariff, fifteen months elapsed ere it was consummated, when it might and should have been within the first three months. This unaccountable delay afforded ample opportunity for the importation of vast quantities of both wool and woolens, and a perfect glut in our markets existed at the time of the passage of the act in March last. Other causes have existed to prevent the effects of the tariff thus far, and cannot probably be suddenly removed. The farmers' crops of last year were more or less short throughout our whole country, thus causing a depression of business generally, for it always follows that when the great farming interests of the country are

prosperous, all others flourish; and, *vice versa*, when they are depressed, a languishing condition ensues. Agriculture is the basis, the foundation of all other interests; it cannot be depressed without the sympathy of all others. The farmers are the great consumers of manufactured goods; if their means are curtailed, and they find it difficult to purchase, and *must* economize to the utmost to live within their means, the manufacturing and trade of the country will most sensibly feel it.

This state of things has existed for the last nine months, and now exists, and must continue until the marketing of the present growth of crops, which, by present appearances, will afford some relief, and help to clear the markets of the surplus of woolen goods, which is causing the low prices of our domestic wool. The manufacturers and importers should have foreseen, when in anticipation of an increase of duties, they were straining every nerve to flood our markets with foreign wool at the nominal duty of 3 to 6 cents per pound, that a reaction would ensue; they ought not to have expected that they could sell these goods, made from cheap foreign wool, at a great profit, in competition with the foreign importer of goods, while they were leaving the domestic wool on the hands of the grower, unless he would sell at much less than the cost of growing it. By this operation, combined with the other causes named above, the farming interest, with its onerous taxation, has been so cramped, that it has been but a limited and poor customer for woolen goods, and must continue to be so until a change can better its condition, and place it at least where it can receive a new dollar for an old one.

Every prudent man will wear his old coat another year before he will run in debt for a new one. But I would not be too hasty in selling wool at present prices; it does not pay the cost of production. My surplus sales are almost wholly confined to this article, and where the help must be hired at present prices, taxes paid, with all other contingencies, I know the fine qualities, well washed, cannot be afforded for less than 70 to 75 cents per lb.

Of all the protective tariffs we have had in this country, none has had an immediate operation. There have ever been depressing causes that have postponed and delayed action for a while, and so it is now; but the time will and must come when prices will advance, and much more, in my judgment, than to pay the interest for holding. The duties on woolen goods are higher now than ever before, and they should be, for the government excise taxes are much higher than ever before, and a protection against the foreign article should be had, in order to give us a fair competition in our own markets. The tariff of 1828, the highest we ever had except the present on woolen goods, and higher on wool than now, had no material effect on prices for more than two years. The country had over-traded, imported largely over the means for paying, and the English manufacturers seemed determined not to relinquish the American market, and crowded their fabrics upon us, even at a loss to themselves, hoping to break down and destroy our manufacturers, knowing that they were then in their infancy, and if they could not be crushed, would sooner or later become their rivals, and hence these strenuous efforts to annihilate them; and from the vast amount of woolen goods shoved upon our markets for the last twelve months by the foreign importers, it savors a little of a repetition of the old game; but we shall survive it, as we did before, and come out all right in the end.

Whoever remembers the operation of the tariff of 1828, will take courage and not be disheartened at the present aspect of the wool and woolen trade. The trade was at a low ebb, and so continued for a long time. Domestic wool was a drug upon our hands in 1829, '30, and many began to doubt the efficacy of tariffs, and John Randolph proclaimed from his seat in Congress that he would travel forty rods out of his way to kick a sheep. But business revived, the woolens were sold out of our markets, prices improved, and in 1831 wool advanced to 60, 70 and 75 cents per pound,—nearly 100 per cent. in less than three years.

I do not claim any such rapid advance under the workings of this tariff, but I do claim that no inconsiderable advance will take place within the next eighteen months, and before sacrificing ten to twenty cents per lb. on what we now hold, I would hold a while longer, unless necessities are urgent.—*J. W. Colburn, in Co. Gentleman.*

Mt. Vale Farm, Vt., July 14, 1867.

WARM DRINKS IN HAYING TIME.

Some years ago, a medical gentleman of high repute published an article in the newspapers of the day, urging upon all farmers and others obliged to work much in the open air, to avoid the excessive use of cold water, and use instead warm drink. We all of us know that many deaths and much sickness occur every year by a too free use of cold water during the excessive hot weather of summer; and we are convinced, not only from nature's reasonings, but from experience, that warm drink is less liable to prove injurious, and will quench thirst more satisfactorily than ice cold water. We therefore urge all housewives to keep the teapot on the stove when cooking, and send to the men in the field a quantity of warm tea, with milk and a little sugar added. This will be more nourishing than water, will satisfy thirst more completely, and men will not need to drink of it so often as of water, and will consequently receive no injury from taking it. In hot weather the interior system needs to be kept at a temperature equal with or above the temperature without, but the free use of cold water chills the system within, hence the inju-

ry. Men will stand the heat much better if they partake of warm drink, than if they imbibe freely of cold water.—*Maine Farmer.*

LETTER FROM THE FARM.

Among the Farmers.

CONCORD, July 22, 1867.

JOHN ADAMS' recommendation to ring the bells, fire off crackers and big guns on the *Fourth of July*, has been lived up to, to the very letter, for a good many years. Perhaps that was well enough when cities and villages were few and far between, compared with what they are now,—when there were not so many children in the streets whose clothes might be set on fire by a rollicking rocket, nor half as many horses to be frightened and run away with, and break, the limbs or necks of a carriage full of people!

It certainly was refreshing on the last 4th of July, to find a quiet day and be able to drive about the town without critical danger of being run away with, or upset by a frightened horse.

After all, I am inclined to think some of the farmers of this town were as patriotic in visiting and examining the farms of each other, as they would have been in the loudest demonstrations of drum and trumpet, big guns and crackers.

At the close of their winter meetings, the Concord Farmers' Club, voted to spend the 4th day of July in visiting as many of the farms of the members as time would permit; and in accordance with that vote commenced their perambulations by driving to the farm of

Mr. ABIEL H. WHEELER. Most of the land which he cultivates is rather moist, cannot be conveniently drained, and requires considerable skill to manage it so as to get remunerative crops. With skill and industry, however, he has succeeded in every crop he has undertaken, with the exception of apples. He now has a large number of apple trees, very vigorous, and of beautiful form, which make an abundance of wood every year, but have never fruited. A portion of the land upon which they stand has been heavily cropped with corn, strawberries, asparagus and potatoes, in the hope that the trees would cease their growth, in part, and produce fruit. But no effort in that direction has been successful, so that he has cut down an acre or two of them as cumberers of the ground. The remainder will probably share a similar fate.

All the crops on Mr. Wheeler's farm were clean and promising. In strawberries he had *three* acres; in asparagus, *two* acres; in pickles, *five* acres; in watermelons, *one* acre. He keeps quite a large stock and "makes" milk for the market, but as the cows were at pasture I did not see them, and made no inquiries as to quantity or profit.

The next call was at the nursery grounds of Mr. ALBERT STACY, the worthy post master of this town—a gentleman who loves flowers and farming as well as good old Izaak Walton did "virtue and angling." A year or two since he purchased a "peat hole," with peat in it, and some scrub oak and sandy plain land attached. The hole was drained and peat thrown out; scrub oaks cut and burned, and their ashes mingled with the peat and spread upon the land, and now it is covered with the finest three acres of early Valentine beans that I ever saw. Along side of them are 1¼ acres of pop corn, 5 acres of potatoes, 6000 peach trees and 1000 pear trees, together with other varieties of nursery truck. He has made more than two plants grow where only one grew before, and, one of these days, is to tell the Club whether he has done it *profitably* or not. Our next call was at the farm of

Mr. CHARLES A. HUBBARD, and a large farm it is, and well tilled, although large. We found him *patriotically* getting in hay! but he left all and followed the club. He cuts some seventy-five tons of hay, keeps a large stock of cattle, makes milk for Boston, rakes some hundreds of bushels of cranberries, makes money at farming and knows how to be liberal with it when earned. Had I not been called away, I should be more precise in describing his operations. His buildings are spacious and in excellent order, and the pair of bays and comfortable carriage at the door, were indications that the family *ride* sometimes as well as work.

Mr. JAMES P. BROWN has a large farm, and one capable, I think, of producing more for the same number of acres than any other in town. One compact field directly behind the barn contains eighty acres. A portion of this, where it seemed to need it, has been underdrained, which has wrought wonderful changes on it. The crops on it were very fine. One acre in rye was remarkably stout. He has

three acres in corn, and if we understood him rightly, thirteen acres in potatoes, two and one half in pickles; he cuts some fifty to sixty tons of hay, winters twenty-five to thirty head of stock, and was then making fifteen eight quart cans of milk daily. He keeps fifty fowls, which yield, by careful account, a net profit of *one dollar* each per year, besides the convenience which they afford in eggs and flesh.

Our next "trot" was to the farm of Mr. Elijah Wood, the man who hauled half a cord of wood, or less, from the nostrils of his ox last winter! He also has a large farm and has twenty-five acres under cultivation this summer, which is designed for a pasture next year. He has thirteen acres in corn which was sown with grass seed at the time when the corn was hoed the third time. Three acres of this is in pop corn, and was manured with leached ashes and superphosphate of lime at the time of planting, and a top dressing of the same at the time the grass seed was sown. This was done as an experiment. Seven acres in potatoes were mainly manured with ashes, superphosphate and salt. Three acres in cucumbers for pickles, and half an acre in peas.

Mr. Wood informed us that a portion of this land had not received a load of manure upon it since his remembrance, and that he was experimenting in various ways to learn whether a light, sandy loam land may be profitably improved by the use of special manures, when cattle manure cannot be obtained.

This is a most important point to be settled, and one which will prove profitable to farmers, whether it be in favor of the use of special fertilizers or not.

Mr. Wood has heretofore made valuable experiments on his farm, some of which he has communicated to your columns. All the other gentlemen whom I have named, are occasional contributors to the Farmer. They are practical, skilful, systematic men in their vocation, and what they state to your readers is worth an attentive consideration.

The perambulations were continued in the afternoon, which I could not make it convenient to attend. The last call of the Club was at the farm of the writer, for an account of which the reader must look to the Secretary of the Club, who has a sharp eye and an easy going pen.

The attentive reader will see from the above statements, how rapidly an old-fashioned farming town, eighteen miles from Boston is being converted into a *market garden*. It is only a few years since West Cambridge, (now Arlington.) Belmont, and a few other towns in the neighborhood of the city, furnished nearly all the early vegetables that were consumed there. Now these supplies come from nearly all the towns within a radius of twenty miles of Boston and the other cities near it,—those towns having a railroad probably supplying by far the largest portion.

In addition to the asparagus, strawberries, lettuce, and other salads, we have twenty-five acres in grapes, which are becoming very productive, and whose crops mostly go to the Boston markets. This phase of farming, called *market gardening*, is being gradually extended each year, and if manure can be transported from the cities at a paying cost, there will soon be a large business done in this branch of cultivating the soil.

As the cities of Cambridge and Charlestown increase in population and business, the lands heretofore occupied for raising "garden truck," will become too costly for such a purpose, and cheaper land further back must be taken. So it will be, we presume, on all sides of the cities, and the farmers who have heretofore raised only the grosser crops will turn their attention to fruits, vegetables and flowers.

Similar visits in other farming towns would produce, I think, valuable results; farmers would make more money for them. Try it and see. Truly yours. Simon Brown.

Messrs. R. P. Eaton & Co.

Washing Milk Cans by Steam.—Homer A. Kidd of Walden, Orange County, N. Y., writes to the *Utica Herald* that in order to get good, pure, sweet milk at his factory, he washes with steam all the farmers' cans, both night and morning. Forty quart cans are used, the same as are used on the railroads to send milk to the city. He thinks this extra work pays four-fold, for he finds he cannot trust the farmers to keep their cans sweet and clean. He has learned the importance of having good milk in making a prime article of cheese. With this washing of the cans, and the farmers having tin pails to milk the cows in, he gets the milk in much better condition.

DEVIL'S DARNING-NEEDLE.

This insect is known throughout New England as the "Devil's Darning Needle," and many children suffer much from fear of its sting. They are sometimes told that if they say naughty words this "critter" will come and sew up their mouths. This is not only a regular ghost story, but it is a slander on the poor innocent Darning Needle, which, in fact, can neither sting nor bite, and may be handled by the most delicate fingers with perfect safety. Still many children are really afraid of it, and watch its flight with emotions of pain and dread, instead of admiration and pleasure, which it should excite. It is not only entirely harmless, but it is as useful as it is busy and active. If the children, in place of running from it, would invite it into their houses, instead of being pierced by its ugly looking javelin, they would wake up in the morning with fewer "skeeter bites," and their mother's breakfast table and their own noses would be less troubled with flies. But the poor thing has got a bad name, and so it is shut out of our dwellings and out of our society.

But, laying aside our fears and our prejudice, let us some calm summer afternoon, at about five or six o'clock, sit down on the bank with our face to the west and a hill of corn or some other growing plant between us and the setting sun. Now look! What do you see? Why, there is the Dragon-fly poised in the air, apparently as motionless as death, with wings outstretched, just as they are represented in the engraving above. What can he be doing, so motionless, hanging in the air! He is—but he is gone! What could have struck him out of existence so suddenly? Look on the other side of the corn. O, there he is, just as still as ever. He is watching his prey. Now look between yourself and the sun, and you see insects darting off from the hill of corn, so small that the eye would not discern them unless in that peculiar light. They dart from the corn, make a few gyrations and back again, that being the boundary of their travels, and, alas, too often the boundary of their little life. The dragon-fly does not rest suspended in the air without an object—and every time he passes back and forth, one of the tiny dwellers upon the corn goes to make up his evening meal.

Will not these suggestions induce many to study the habits of, and become more familiar with, the beautiful and harmless dragon-fly?

For the New England Farmer.

WHY THE BOYS LEAVE THE FARM.

It is well known that in the farming portions of New England the farmer's sons, in perhaps most instances, forsake the occupation of their fathers, and leave the old homestead to be tilled by strangers. Many reasons have been given for this unfortunate circumstance, none of which seem to me to go to the root of the matter.

The true reason lies here. Regular, legitimate farming pays perhaps the smallest profit of any business requiring equal capital and skill; hence, active young men are apt to go where they can or may do better. The profits of a farm arise from two sources: interest on the capital invested, and return for the labor expended. The first will be low, because of the entire absence of the element of risk; and the second will be moderate, because it is the return for—in great degree—unskilled labor. Moneyed men will tell you that the interest paid for the use of money is regulated by two considerations,—the actual worth, and pay for the risk the lender runs of losing the principal. The way the low interest on the value of a farm is brought about is by its cost being high relatively to the profit realized. Property is, of course, valued high or low, according to the

profit which it yields; but where the liability is strong that the whole may be lost, this value will stand at such a point that the profit may constitute a large per cent. upon it. On the other hand, where the property is of a nature which must, without fail, yield an income while wood grows and water runs, the price rises so as to leave for profit only the bare worth of the money invested. This last is eminently the case with money put into a farm.

Again as to the value of labor. It is not meant, of course, that small skill is needed to manage a farm well,—the above remarks show plainly that unusual expertness is requisite to secure a handsome return,—but to do fair, average farming, to reap reasonable crops, calls for little more skill than to wield the hoe and turn the furrow. Such labor cannot command high wages. These observations, if carefully considered, will explain why it is that the boys find it such slow work to pay for a farm from its own profits. All perfectly safe investments accumulate slowly. Think how long it would take for the English three per cent stocks to double themselves, while money lent on "wild-cat" security, at twenty-five per cent., increases very fast, *if at all.* This is the whole mystery.

Do the boys who read this, think it small comfort to be told they can make but little by farming, even if the reason therefor be given? Yes, there is comfort in it. Open the eyes of your mind, see all these things just as they are, appreciate all the advantages and disadvantages of both sides, and then choose; and having chosen, go ahead like a man.

Now, boys, let us look into it. If you stay on the farm and do not load your land with expensive, fancy improvements, and run in debt for them, you will be sure of a living for yourself, wife and children,—and the more of these "olive branches" you raise the richer you will be,—so long as the world endures. The ground will always yield her increase, and if you sow diligently you will reap abundantly—a little more of this and less of that in any given season perhaps—and the gathered crops you can eat, or you can sell them without asking the favor or patronage of any one. You hold the staff of life and all must come to you. Wars and rumors of wars, financial ups and financial downs, interest you simply as the news of the day. For at the bottom of the whole business is the fact, that you can always, at a pinch, live entirely off the products of your land.

The shoemaker starves unless some one will give him food in exchange for his wares; but you are not only sure of a return, but that return you can put in your own and your children's mouths, and meanwhile laugh moderately at the panics of your neighbors.

But suppose you resolve to leave the farm and seek your fortune elsewhere. You instantly become more or less dependent on the favor of others; and, upon investigation, you will discover that the higher the prizes which your chosen profession offers, the less is your chance of winning them. You look to the law, perhaps. A quarter of the members of that profession fail utterly, and either die in the midst of disappointment or seek other means of support; perhaps one-half manage to live; an eighth do well, while the rest run up from well to very best, acquiring wealth and distinction. Do you wish to be a merchant? At least one-half who venture into trade fail to make way for themselves; of the other half most do fairly; a few become "merchant princes," unless previously killed by hard work and care. Thus it is, wherever we may look. If you must needs be rich and will take the risks connected with the pursuit of wealth, then the farm is no place for you. You will never do its work with a hearty good will, and had better not try. On the other hand, do you wish to shun the uncertainties of life, and desire to achieve by diligence perfect independence of mind and body—preferring certain moderate success to the perplexities and cares, the ups and downs of the outer world,—then get a farm on the best terms you can, get a help *meet* for you, raise up a family, and consider yourself, with reason, one of the princes of the earth.

If this essay has interested and instructed you, I may offer some hints by which you may be able to get more for your labor on the farm. A.

Claremont, N. H., 1867.

Remarks.—It is very common to assume, as our correspondent does, that the young man who has had an apprenticeship of thrice seven years in the use of agricultural implements should be ranked with the unskilful laborer; is it correct to do so? Put an axe, a scythe, a hoe, a sickle, or even a bob-sled into the hands of a really "unskilful laborer" and place him in the field or wood-lot alongside of a Yankee farmer's son, and then see if the latter has not the full advantage of "skilled labor."

For the New England Farmer.

NOTES ON THE CONNECTICUT VALLEY.---No. VI.

Cultivation of Tobacco.

I am ignorant of the exact time of its first culture, as a field crop, in this section, but am under the impression that it dates back twenty or twenty-five years, as I have seen fields that have been referred to as having been used for growing tobacco that period of time. Much experience is thought necessary to success in this as in all other kinds of business.

In the selection of a proper locality for a seed bed, a sheltered place with a southern in-

clination is sought for, in order to bring forward as early as possible the plants for setting. A failure to do this often results in a failure at the end of the season, by reason of frost. The seed bed is highly manured, and weeds are sure to be on hand as soon or sooner than the tobacco, and must be picked out when large enough to be laid hold of with the fingers, or they will overtop and destroy the plants. In preparing the field for setting, no great diversity of practice prevails. Some, and I think most, plow in their manure the first time plowing, two or three weeks previous to the last plowing, which is usually just before time to set the plants. This method ensures the destruction of many weeds as well as the thorough incorporation of the manure with the soil, which is very desirable not only for tobacco but all other crops.

The harrowing comes next in order, then the laying out in rows. Some prefer the flat culture, others ridge up. The hills are prepared with the hoe. Many, of late, use some fertilizer in the hill. Phosphates are preferred. Fish guano is also extensively used for this purpose, and is also spread on, either with or without composting with muck or loam. I used the past season several tons of it, composted with plaster, to fix the ammonia, with satisfactory results.

As soon as the plants are set it is necessary to be on the constant watch for worms. The cut-worms are often very troublesome. A single night's work of theirs as revealed by morning light is sometimes really surprising. Resetting must be persistently kept up until too late to hope for the maturity of the plant. As soon as, and even before the cut-worm is out of the way, the large, green worm, that some call the tobacco worm, comes upon the scene of action, and if allowed to have his own way, would soon relieve the cultivator of all further trouble with his crop, by rendering it worthless for market. The leaf, being used for wrappers for cigars, must be free from holes and fractures. A single worm will, in a very short time, destroy several dollars' worth of plants. Each day, if plenty, they must be looked up. All other work must give place to this. The weeds also must be kept down and clean culture secured. All cultivators seem to recognize the tyrannical behests of this crop and patiently submit to them.

Two to three weeks previous to cutting, the topping is done, and the suckering attended to. Experience is necessary for doing the former. There is said to be a leaf that indicates where the top should be severed. Care is requisite in handling when putting in and hanging up for curing, lest the leaf should get torn. It must remain on the poles a longer or shorter time according to the weather before it is *safe* to strip. If properly housed, many leave it until spring before doing it. A damp spell or a rain storm is required to limber the leaf so as not to break in handling. Often delays of several weeks occur from the absence of such weather.

For a few years prices were very remunerative, and a ready market at hand. A great depression in the market exists at present, and a feeling of discouragement now prevails. A prominent farmer here told me to-day that he would not give ten dollars an acre for farms, if the tobacco crop was to be a failure in future. This feeling is quite common. The South and West are regarded as a refuge from hard work and small returns. It is well to remember the adage respecting getting out of the frying pan into the fire. K. O.

East Windsor, Conn., 1867.

GROWING RYE STRAW.

The making of white print paper from rye straw was commenced at Fort Edward N. Y., in 1857. At that time, rye straw could not be procured in sufficient quantities to keep one mill running. It takes two tons of straw for a ton of paper. The farmers began to grow the crop in Washington and Saratoga counties, and now ten large mills are in operation, using in the aggregate 15,000 tons annually. The straw at these mills, for the past five years has averaged less than $15 per ton, and $225,000 are brought into these counties for straw alone. Then there is the value of the grain. It was a poor farming district before the introduction of rye growing, and now the farmers were making good incomes. The mills at Herkimer are now using six tons of rye straw per day. Matthew Smith, of Frankfort, grew last year on an acre of land and from two bushels of sowing, 47 bushels of rye, for which he got $1.20 per bushel, and two tons of straw which were sold at $24. This makes $80.40 as the yield from one acre, which may be considered a very profitable crop. Probably the farmers of Herkimer would find it to their advantage to grow rye in connection with the dairy. The Herkimer mills are using 2,000 tons of straw annually, and are forced to get their supply from Schenectady. It comes in bales. Rye straw is worth from $24 to $30 per ton in New York city, and is of ready sale. At the mills East they pay $20 per ton for it. The business is confined to the States of New York, Massachusetts, Pennsylvania, Maryland, Delaware and Illinois. Nine-tenths of the printing paper made of straw is produced in New York.—*Utica Herald.*

—G. R. Rathburn, Vineland, Mo., 47 miles south of St. Louis, on the Iron Mountain Railroad, writes to the New York Farmers' Club that those who are acquainted in California, think the climate and soil of his section equal to the Pacific coast for the production of grapes. Five hundred gallons per acre is not considered an unusual crop, and so thoroughly do grapes ripen, that no sugar is used in manufacturing the wine.

MANURES.

ITHER directly or indirectly, manures are the motive power in agricultural enterprises—the engine which propels the vessel. Much and highly as we prize cleanly cultivation, it will avail but little on an impovished soil.

Manure contributes in one way or another, to supply nearly all the aliment which vegetation receives, and it is to those manures which are furnished by decaying vegetable and animal matters, that we are principally indebted for the fertility of the soil, and the capacity it possesses of yielding those products so essential to the life of animals, and of man.

Every thing that has once been energized by the vitalizing principle of *life* is, in itself, qualified to act as manure. When life ceases, the chemical affinities assume ascendancy, and the chemical constituents are released from the union imposed and confirmed by the vital principle, and each acts independently, and produces phenomena peculiarly and specifically its own. The inorganic particles return again to the soil from which they were originally derived, or elaborated; while those parts which are the result of organic action, escape into the air, or are absorbed by substances for which they possess affinity, and by them are preserved to be again employed in the economy of organized reproduction and life.

The waste attendant upon the decay or decomposition of organic matter, under ordinary circumstances, involves a heavy pecuniary loss to the farmer; the magnitude of which he not unfrequently increases by the improper manner in which he applies such substances when appropriated as manure to his fields and crops.

Some persons deprecate the idea that the mere gaseous products of vegetable fermentation, can be of any essential benefit to plants; yet the experiments of Sir HUMPHREY DAVY demonstrate that they are so. He filled a retort by inverting it over a mass of fermenting manure, and placed it among the roots of certain vegetables, and although nothing but vapor escaped from the beak, yet the vegetation around it presented in a very short time a surprising degree of fertility, and was far more energetic and luxuriant than that in the same field, which was beyond its influence.

It is thought by some that at least one-half of the valuable, soluble parts of all the refuse material produced on the farms of this country, is lost either by infiltration, which carries it below and beyond the range of easy appropriation by the roots of the vegetable tribe, or by evaporation, which no less effectually ensures its loss, by disseminating it in the atmosphere, to be borne away by the winds.

When manure is protected by roofs, or even by a stratum of mould, while undergoing the process of fermentation, a very considerable proportion of its gaseous products are preserved and retained. "Absorbents" and "fixers" should be always at hand, and not a particle of matter capable of contributing to vegetable growth should be suffered to escape unemployed.

A pile of fresh manure will shrink in weight surprisingly in a short time. It has been tested by different observers. One states that twenty-five ewt. recent dung yield,

At the end of six weeks,	21 ewt.
After eight weeks,	20 "
When half rotted,	15 to 17 "
When fully rotted,	10 to 13 "

From all these facts, it must be inferred that great care ought to be observed in preserving manure, after it is collected.

PEACHES, GRAPES, AND CURRANTS.

We had the pleasure, a few days ago, of going over a portion of the farm of Mr. SAMUEL WILSON, of Windham, N. H., and of looking at the crops upon it. For many years Mr. Wilson was engaged in the nursery business, and produced a large amount of most of the trees and flowers that were in demand in his region of country. He did so much, and did it so well, that he became widely known as a reliable person from whom to order any thing wanted in his line of business. Latterly, however, he has abandoned his general business in order to give more attention to two or three special crops. To these special crops our attention was principally turned.

He has *seven* acres, in *peaches*, *grapes* and *currants*. On these seven acres there are *eight hundred* peach trees, being set one rod apart each way. Those having stood there the longest are seventeen years old, and from that down to those but six years old. Of the 800 in all, there was not a single tree without peaches! and on most of them there was altogether too many.

On entering the orchard the first thing that struck us with surprise was, that, with the exception of a few among the oldest trees, there were no *dead twigs* or branches to be seen. The trees were about eight or nine feet high, very uniform in height, and were clothed with a remarkably high-colored and vigorous foliage.

"Why are not these trees winter-killed?" we inquired; "is *that* the reason?" pointing to a liberal *mulching* of hay around each tree.

"That is the question usually asked by observing persons, on entering the orchard," he replied.

He said the *base* of the tree, and the roots near it, must be protected from sudden changes, and in accordance with that belief he hauled *four* tons of meadow hay and straw into the orchard and placed it about the trees.

In connection with this practice, he heads the branches in, annually; not merely clipping off the ends of the twigs, but cutting off the upright branch just above where two side limbs push out; even when the upright branch is half an inch or more in diameter. This induces other lateral branches to push out below, which soon give the tree a low and compact form.

The soil of the whole seven acres is ledgy and stony, and has a sort of yellowish color. When worked, it is extremely light and friable, very productive, and Mr. W. says, sustains a drought better than heavy clay loams. All the plants growing upon it gave evidence that it contained highly fertilizing elements. Do those elements come from the stones, in a considerable degree? When the land is in grass he states that the crops are usually abundant.

Mr. Wilson has a large, and we should think, excellent farm, and in good order, but he stated to us that he can make more money from the seven acres in question, than he could upon *four* farms like his. He does not succeed, however, in getting a crop of peaches every year, perhaps not a full crop oftener than once in three years,—but a partial crop every year until the last, when he did not have a peck.

Another portion of this enclosure was occupied with grapes, wildlings, taken from the valleys around him, and a selection of the best made from a considerable number. They appeared very vigorous, had a light crop of fruit upon them, and are entirely hardy. The wine made from them, was clear, quite dark in color, and had a little of the natural grape flavor both in the taste and smell. Several ladies and gentlemen present tasted it and pronounced it the best native wine they had ever found. He makes it in pretty large quantity and sells it at $3 per gallon.

Mr. Wilson formerly paid considerable attention to the culture of the currant as a market crop, but the peaches and grapes, have absorbed his attention so much that he has allowed that pursuit to become of secondary consideration.

Evidences of his passion for trees are on all sides of his farm. Some splendid black walnuts stand before his house, the butternut lines the roadside, and young and beautiful shell-barks greatly ornament what would otherwise be waste places. All these are intermingled, in some places, with lofty chestnuts, white pines and other forest trees.

For the New England Farmer.

NEW ENGLAND ENTERPRISE.

A compact tract of 540 acres of wood land, much of which was heavily timbered, situated about two miles from West Acton Depot, Mass., has been known for many years as the "Inches Estate,"—having been held by the heirs of Henderson Inches, of Boston. Four years ago this estate was purchased by a gentleman who cleared off the wood and timber, and resold the land in lots to suit purchasers; an operation by which he is reported to have cleared about fifty thousand dollars. After the removal of the wood, the land was sold for $20 per acre,—a high price for such land, but being by the side of a public road, at a good elevation, well watered, and with a good soil, although somewhat rocky, it was in demand as pasture land.

Among the purchasers of this tract was Mr. Luke Blanchard, of West Acton, who bought 200 acres. He cleared up 150 acres of it the first year; putting 100 acres into winter rye, seeding it to grass. The other 50 acres, being too wet for grain, were drained; the ditches being so arranged that the water can be held back or let off at pleasure. Over a large part of it, timothy, redtop, and fowl meadow have come in, and where the water flashes over, bluejoint is showing itself. Those who have had experience in subduing such land will appreciate the amount of labor that must have been expended upon these 150 acres.

The writer saw this land before Mr. Blanchard commenced operations, and also while he was at work upon it. A more uninviting field of labor than the wet portion presented, could not easily be found; covered, as it was, with limbs, stumps and brush, with much of it quite

wet. Now behold the contrast! Over this whole field of one hundred and fifty acres, there is a beautiful covering of grass. Mr. Blanchard has already top-dressed several acres with loam and gravel and intends to improve much more in the same manner. A part of the grass is now cut and yields a very heavy crop,—as much as can be well dried upon the ground.

Other purchasers have also made creditable improvements. About 500 acres, in all, have been cleared, most of which has been enclosed by substantial stone wall. This large tract, varied with hill and valley, now presents a beautiful sight,—a part of it being devoted to mowing, and part reserved for cattle, who daintily crop its abundant feed.

Mr. Blanchard sold his crop of rye and straw on the 100 acres, as soon as harvested, for about $3000; and might have obtained several hundred dollars more for the grain had he kept it longer. The cost of improving the 150 acres, he estimates as something more than the income of his rye crop. He paid $4 per acre for cutting the brush the first time. The marketable value of the whole would average about $75 per acre. Supposing the whole 500 acres now cleared to be brought to the same degree of fertility with that of Mr. Blanchard's, we have nearly as much added to the value of real estate in the town as was taken from it by the sale of the timber which formerly grew upon it. The taxable valuation was about $40,000. The value of the land as improved, is now nearly equal to this, and will soon be considerably more.

In this connection I would say that Mr. Blanchard has made improvements on his other land in West Acton, that deserve a passing notice. Nine years ago he cleared and brought under cultivation a piece containing nine acres, which was then very badly overrun with brush. Two acres of it were wet and unfit for cultivation,—the most of it moderately elevated, with soil of gravelly loam. The next year he set out upon it three hundred apple trees, forty feet apart, with peach trees between,—about 1000 trees in all. The apple trees now are of good size, thrifty, and free from borers; although orchards in the vicinity have been very badly injured by them.

A plan adopted by Mr. Blanchard, and which was practiced by his father, the late Simon Blanchard, for many years, with great success, is to put strong green manure around the trunks, in the fall. He thinks that the borer is destroyed for the want of air; or, perhaps, being tender at that time of year, is killed by the strength of the manure. He approves also of the method lately recommended in the New England Farmer, of placing a mound of earth around the tree. When the tree has been badly eaten by borers, he recommends banking up with earth; and showed some trees, which, having been injured so seriously as to begin to droop, he had saved in that way, and which were now flourishing and of good size. This land proved too low for the peach trees. They suffered from the winters. Mr. Blanchard says he would not set another peach orchard on such low land. This year, however, he will have a fair crop of the best varieties of the peach. The lowest part of this piece of land has been drained with blind ditches, and yields heavy crops of excellent grass. The whole lot is worth now some five times its former value. Should a favorable year for the apple come round again, this orchard will yield a very handsome return.

Another young apple orchard of three acres, purchased by Mr. Blanchard three years ago, for a little less than three hundred dollars, would now bring readily one thousand dollars; the increased value being due chiefly to judicious cultivation. The trees are now very thrifty over the whole orchard. At the time of purchase, a great many of them seemed to be going back into the ground. It was generally thought that they could not be made to grow so as to amount to anything. The land is mellow, with a warm soil, and the crops raised between the trees have paid well for all the expense of cultivation.

Another tract of land situated near his present residence, purchased by Mr. Blanchard, also illustrates the magical effect of the hand of judicious improvement. Twenty-seven acres, with the buildings thereon, were bought two years ago for $1800. A large part of it was moss-bound and unproductive; and was considered nearly worthless for cultivation, simply because it had lain for years without being tilled; the rest of it was coming up to young wood. Some of this, having been broken up, was planted this year. Upon it there is one of the most promising fields of corn we have seen this season. This land, thus improved, would readily sell for $100 per acre; and it is the intention of the owner to cultivate the whole in the same manner. He has sold the house for $900; the barn, with less than an acre, would bring $900 more. If we reckon the crops as paying the cost of cultivation,—which Mr. Blanchard estimates they will do, and more,—there is a present gain in this one agricultural enterprise of over $2500. This land, as soon as improved, will be in quick demand for building lots. It is situated in the midst of a thriving village, and the prospective value to the owner is very great.

For the last twenty years, Mr. Blanchard has been engaged in the laborious business of marketing farm produce; including not only vegetables and fruits, but calves, poultry, &c. The village of West Acton is said to be more largely engaged in this trade than any other interior town in the State. There are large apple houses here, where several thousand barrels of apples are annually stored; most of which, of late, have been purchased in other States, by the enterprising dealers of this place.

In the single article of berries, as many as 200 bushels per day have frequently been sent to market from this depot; and, of these, Mr. Blanchard has sent fully one-half. During this time, he has also carried on a large farm, employing constantly quite a number of men.

He served a full apprenticeship upon the farm in his boyhood, and prides himself upon this education as the foundation of his success. He intends, hereafter, to relieve himself from many of the laborious cares incident to his business as a marketman, and devote himself more particularly to farming.

By untiring industry, enterprise, honesty, and fair dealing, Mr. Blanchard has won the highest character in the community; and has fairly earned the fruits of his labors, which he has thus liberally obtained while yet a young man.

In speaking of these particular improvements, I would not be understood as intimating that there are not other individuals and other specimens of improvements all around that deserve notice, but being striking and very creditable instances they are alluded to as showing forcibly, what might be done in hundreds and thousands of other places in New England. Let a like energy and enterprise, backed by capital, and guided by a practical farm education be directed to the improvement of other waste places, and many thousands of acres, now lying almost waste,—some of which are to be found in almost every town, comprising much of our best soil and within easy access to the best markets,—may not only be doubled in value, but greatly increased in attractiveness. Let this be done, and our young men would soon discover here in our midst mines more valuable than those of California; situations more desirable than those which allure so many young men to exchange their New England homes for an ideal Eden at the West or South, or in some other occupation. W.

For the New England Farmer.

WASTE LAND--MOWINGS--PASTURES--IRRIGATION.

No one can travel much, even in New England, without seeing considerable waste land. By waste land I do not mean land naturally unproductive; but land naturally fertile, but which, by mismanagement, either produces nothing valuable or less than it might easily be made to produce. With this definition, waste land may be found everywhere,—in close proximity to our dwellings, in fields, in pastures, and wood lots. Sometimes a spot of waste land may be found where the water runs from the sink, or where the wash water is thrown out. Sometimes such waste spots are caused by the sawdust, chips, and other debris of the wood pile being left to accumulate year after year. Sometimes where the broken and worn out farm implements, and the broken and useless household furniture, articles too numerous to mention, are thrown in one promiscuous heap, or scattered helter-skelter in every direction; and sometimes where the wash of the barnyard or hog yard is too powerful for anything to grow but burdocks and nettle.

In regard to the unhealthiness and unsightliness of such surroundings, and to the waste of manure caused thereby, each one may form his own opinion. To say the least, such spots of ground are wasted. We hoe too much, mow too much, pasture too much, and thus encroach upon the growth of our forests without obtaining an equivalent benefit.

I have not found the first man who will contradict these statements; and yet, most pursue the same old beaten track which their forefathers trod. The common practice is to break up grass ground, plant it two years, putting on about one half the proper quantity of manure, and seed it down the third year with grass and grain without any manure. The soil is thus left in not much better condition than when first broken up. In a few years land treated in this way will yield no more than one half a ton of hay to an acre. The average crop throughout New England probably is not more than that. If this mode of farming is good under any circumstances, I think it is not so where the land is good for grass, and is near a market. In such cases I think that grass is the most profitable crop, and that no one shou'd be satisfied with a less yield than one ton per acre. On some fields, especially moist land, top dressing is doubtless better than plowing. Where we do plow we should manure highly, and lay the land down in good heart. If mowing fields were not fed in the fall they would produce good crops much longer.

Some fields might easily be made to produce more abundant crops by irrigation. I know of a field of five acres, which, without any expense except turning a small stream of water on one part of it, and surface draining another part, now produces more hay and of better quality than it did ten years ago. It seems that water in some way enriches the soil. I once knew a spring of pure water to be turned on to a side hill only one summer, with some benefit to the grass. The next spring the water being turned in another direction, the field was plowed and sowed with oats without being manured. During the season there was a striking difference between the oats where the water run the previous year and the rest of the field. I know of a field watered by a spring that is dry by mid summer, which, without being manured, has produced large and undiminished crops of hay for more than twenty years; and I know of no reason why it may not continue to do so for an indefinite period. A farmer in Manchester, N. H., informed me that he had a piece of sandy ground which would not produce white beans; but after watering it a few years, by means of a brook, it would produce anything.

The management of our pastures is as bad as that of our fields, and in some cases more so. They are fed year after year without being manured. Where they can be, they are sometimes plowed and crops taken off, but seldom is any manure put on. Sometimes pine and other trees are permitted to grow till they cover one-half of the ground, and then are cut down. Now unless you mean to make a wood lot of your pasture, why not destroy the bushes before they are large? Sumac, sweet fern, hardhack and whortleberry bushes sometimes nearly ruin a pasture. I have seen one-half of the surface of some pastures covered with what is variously called juniper, ground hemlock, &c. Its branches lay close to the ground and completely kill the grass so far as they extend. When small they can easily be pulled up. When large they may be destroyed by burning or by cutting off the branches in June. Where pastures can easily be plowed, I think we had better make mowing fields of them. If by this means our pastures should prove to be insufficient, the deficiency can be supplied by soiling. In this way we can keep more stock and keep it better. Where pastures cannot be plowed, all kinds of bushes ought to be kept from growing, and I think it would pay occasionally to top dress. Some different system in the management of our pastures is certainly imperiously demanded; for they are every year growing poorer and poorer. Even now pasture land is half wasted.

Derry, N. H., 1867. E. B.

WASH FOR BARNS.

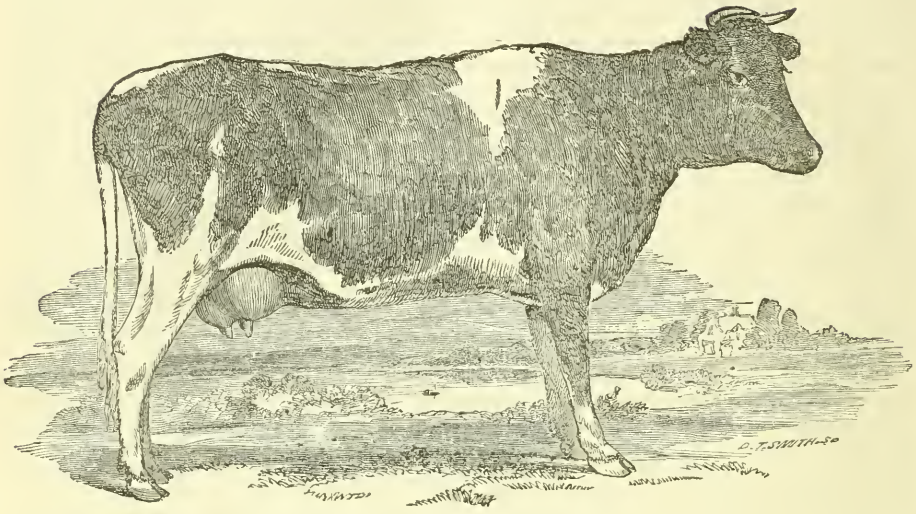
There is no cheap substitute for oil paint. All the different kinds of white-washing are incapable of shutting out moisture. The sides of buildings especially exposed to rains, will lose a portion of any kind of wash by the combined action of frost and moisture. Oil paint obviates this difficulty. There are many different kinds of wash recommended; but with a single exception we have never found anything better than a mixture of good lime and water. This exception we have made a thorough trial with. A rough barn, which received a coating four years ago, now retains most of it, although a considerable portion is scaled off on the most exposed side. This wash is made substantially as follows: One peck of fine beach sand, three pecks of water lime, and four quarts of salt. These proportions might vary without detriment—there should be as much sand as can conveniently be applied with a brush. A farm laborer applied this mixture early last summer to two rough barns, one about thirty by fifty-five feet, the other twenty by thirty, in three and a half days, consuming two bushels of water lime, which was nearly the whole cost of material. This coating, now nearly one year's standing, appears to be as good as the day it was put on. It will be perceived that the expense is only about one-tenth the cost of a coat of paint.

Fireproof Wash for Shingles.—A wash composed of lime, salt, and fine sand or wood ashes, put on in the ordinary way of white-washing, renders the roof fifty per cent. more secure against taking fire from falling cinders, in case of fire in the vicinity. It pays the expense a hundred fold in its preserving influence against the effects of the weather. The older and more weather-beaten the shingles, the more benefit derived. Such shingles generally become more or less warped, rough, and cracked: the application of the wash, by wetting the upper surface, restores them at once to their original or first form, thereby closing up the space between the shingles; and the lime and sand, by filling up the cracks and pores in the shingle itself, prevent its warping.

To Keep Tires on Wheels.—Hear a practical man on this subject: "I ironed a wagon some years ago for my own use; before putting on the tires I filled the felloes with linseed oil; and the tires have worn out and were never loose. My method is as follows: I use a long cast-iron heater, made for the purpose; the oil is brought to a boiling heat, the wheel is placed on a stick, so as to hang in the oil, each felloe an hour. The timber should be dry, as green timber will not take the oil. Care should be taken that the oil is not made hotter than a boiling heat, or the timber will be burned. Timber filled with oil is not susceptible to injury by water, and is rendered much more durable by this process."

Value of Grass Land.—The time has not yet come when farmers appreciate, as they should, the value of grass. Every year dairy products are becoming dearer, because the grass region is limited, and only a few years, will be required to give any farm natural for grass a value which now would be thought excessive. If I wished to buy a farm for my posterity, which would continually increase in value. I certainly should choose it in the region of grass. For I do know that during the course of one's life, a grass farm will bring more money and comfort and with less work than any other farm, whether on the Sciota, the Wabash, or the Mississippi bottoms nor can a farm of equal value be selected and made anywhere within the belt formed by the tropics, the whole world around.—*N. C. M., in N. Y. Tribune.*

—Hon. Sidney Clark, member of Congress from Kansas, has addressed a letter of inquiry to the leading men of that State for facts bearing on the Texas cattle disease, with reference to some action on the subject by Congress.



AN IMPORTED JERSEY COW.

The Jersey cattle are receiving considerable attention at this time. Mr. Jennings says, "the race is supposed to have been originally derived from Normandy, in the northern part of France. The cows have been long celebrated for the production of very rich milk and cream, but till within the last twenty-five or thirty years they were comparatively coarse, ugly, and ill-shaped. Improvements have been very marked, but the form of the animal is still far from satisfying the eye.

The head of the pure Jersey is fine and tapering, the cheek small, the throat clean, the muzzle fine and encircled with a light stripe, the nostril high and open; the horns smooth, crumpled, but not very thick at the base, tapering and tipped with black; ears small and thin, deep orange color inside; eyes full and placid; neck straight and fine; chest broad and deep; barrel hoofed, broad and deep, well ribbed up; back straight from the withers to the hip, and from the top of the hip to the setting of the tail; tail fine, at right angles with the back, and hanging down to the hocks; skin thin, light color, and mellow, covered with fine soft hair; fore legs short, straight and fine below the knee, arm swelling and full above; hind quarters long and well filled; hind legs short and straight below the hocks, with bones rather fine, squarely placed, and not too close together; hoofs small; udder full in size, in line with the belly, extending well up behind; teats of medium size, squarely placed and wide apart, and milk-veins very prominent. The color is generally cream, dun, or yellow, with more or less of white, and the fine head and neck give the cows and heifers a fawn-like appearance, and make them objects of attraction in the park; but the hind quarters are often too narrow to work well, particularly to those who judge animals by the amount of fat which they carry."

Mr. Flint says, "the opinions of practical men differ widely as to the comparative merits of this race, and its adaptation to our climate and to the wants of our farmers. The most common decision, prevailing among many even of the best judges of stock, appears to be, that, however desirable the cows may be on the lawn or in a gentleman's park, they are wholly unsuited to the general wants of the practical farmer."

The cow from which the above engraving was taken, was imported by Mr. J. French, of Roxbury, Mass., direct from the Jersey Islands.

WOOL AT THE PARIS EXPOSITION.

The good book informs us that it is not wise to compare ourselves among ourselves, or to think more highly of ourselves than we ought. Perhaps as a people we compare ourselves with others too seldom, and are a little given to self-glorification. A few weeks since we published a long account of the trial of mowers, which resulted very much to the credit of American mechanics, and from our former success in the exhibition of sheep, we hoped that at least a creditable display of American wool would be made in our Agricultural department of the great Paris show. A letter from H. D. L. Sweet, Esq., Secretary of the New York State Sheep Breeders' and Wool Growers' Association, addressed to Hon. H. S. Randall, and published in the *Rural New Yorker*, throws cold water on this expectation. Just see what he says:—

Of our own land, perhaps the least said the better. In all departments we are deficient, except machinery, and the Agricultural, particularly, is a libel and a disgrace. I believe somebody does show three or four fleeces in a glass case, locked up in the grease,—stained and dirty at that. One fleece looks very fine, but dead like, and it may be some *crack* fleece five or six years old. I cannot find any other samples of any kind or quality.

And as though this was not disgrace enough for one day, or for one World's Fair, Mr. Sweet says, "the worst thing in the Exposition for our wool growers, is a Yankee invention to make Mestiza wool as good as our own. It takes out the burrs completely, and so well was it thought of by the foreign jury, that they gave it a medal from a sample of its work, without its having been run."

From his remarks on the collections of wool from other nations we copy the following:—

In the French department I have not been able to see but very little. Of the samples I have examined—perhaps 25 very fine ones—the wool, without exception, I call short staple, very fine, usually dry, without luster. Some marked "*lane* wool" was, perhaps, from four to six inches, I should think coarser than Mr. Wing's or Gazley's, without luster and dirty, but strong and felt harsh.

In the English Department I have found nothing, except from the Colonies, and they do exceedingly well. Australia sends, I think, 100 samples in all, and all of them good—some beautiful. The length, the fineness and luster is equal to any I have yet seen here, and the strength good. Canada does well in both combing and fine, except some of the fine wools lacked strength, but their combing wool has excellent luster. The colonies of Natal and New Zealand both send samples that are excellent,—but in no great quantity.

Spain exhibits a large collection of fine wool, short and dirty, some very much discolored, has an old look. Perhaps it is some that has been deposited in their Department of Agriculture for years, as there is but little shown by individuals.

Portugal has but few fleeces on exhibition, but of both fine and coarse, white and black as well. The fine is from an individual flock of ten fleeces, of beautiful wool, good length, fine quality, bright luster, silky and strong.

In the Russian Department are about 100 samples handsomely displayed; fine, short staple, very oily, some dirty, but apparently compact fleeces,—some of the washed fleeces white and beautiful. The flock of Amidee Philbert of Atonania, Crimea, took a gold medal. The same flock took the prize in London in 1862. His complete flock number 70,000 in all. Russia also grows some rare wool, and what must be Cashmere goat's hair; long wool invariably coarse.

Austria shows her wool in little, straight bottles, with brass caps, from an inch to two inches broad, and from two inches to eight long, and mostly ungetatable. The wool varies from half an inch to three inches in length, all in its natural state, and in all about 1,000 samples. The Duke of Kruman exhibits a few fleeces in their natural state,—very fine, very oily, very short, and very dirty. Some of these fleeces, about 60 in all, have been washed, some one-half of each fleece washed, and show very white wool and a strong staple.

Prussia has her wool in flat glass cases for samples, about 10x16 and two inches deep,—176 of these with from 20 to 32 samples in each. The longest I could find of fine was not three inches, and of coarse wool not over six inches. There were 62 full fleeces shown.

Wurtemburg shows in Prussia fifty washed fleeces, locked up, that took a gold medal. They appeared to be washed after shearing. They were not uniform in length or quality. Several pictures of large flocks and individual animals grace the walls of the room,—but they seem to me to be one-third neck and head, and not squarely built. J. E. Hoffschlaeger of Weisin, shows a picture of a Negretti ram that looked like a Vermonter.

Egypt makes quite a display of black, white and tan-color,—none of it that I could feel of but what was coarser than spaniel dog's hair.

The Ottoman Empire has a few samples of wool that appear to be about one-fifth hair, and 20 of the Angora goat, labelled "DeLaine." I could not get at them.

From South America the show in some departments is good; in others, poor. Chili sends seven fleeces that ought to have remained at home, and followed our example. Peru sends a single fleece, apparently a good one.

The Argentine Confederation sends 30 fleeces and 100 samples that for length are fair, and otherwise, — quality, luster, and strength, are first-rate. She also shows separately her long wools, that are good, and a few specimens of the wool or hair of the lama.

Arizona seeds 30 fleeces and 100 samples of perfectly *splendid* wool. Some is exceedingly fine, but strong, very long, and of beautiful luster. Samples that had been scoured were white as *un*driven snow.

For the New England Farmer.

BURNING,

AS A MEANS OF SUBDUING THE ROUGH PLACES.

Fire has long been used as a help in clearing land. It acts so quickly, saves so much time and labor, that any other agent or process is considered slow and too expensive. But some begin to doubt the policy of using it at all. A practice which may be tolerated by a backwoodsman in a fertile country, may not be advisable in other circumstances. All the advantages are temporary, and more than counterbalanced by losses; for fire is a great destroyer. It does too much; for, while it quickly removes from sight, logs, stumps, bushes, and other impediments to smooth fields and thorough culture, a vast quantity of vegetable matter at the same time is given to the four winds. The slow accumulation of vegetable growth for years is speedily swept away. In exchange we have a few bushels of ashes, which it is true, are of easy application, and powerful in effect; but which would have rendered as much if not more benefit as fertilizers along with the organic matter from which they have been produced.

Now the great want of our Eastern soils is just this vegetable material that fire destroys. Instead of wasting it by harsh means, it should be the aim of every cultivator to preserve every atom which nature supplies, and also to increase it by every means at his command. Stubborn facts are continually arising to convince the most casual observer of this, and to show that the ultimate effects of burning are decidedly injurious, and that the practice ought to be abandoned altogether. In the Eastern, and in many parts of the Western States, the rapidly increasing scarcity of timber and fuel has given a market value to all kinds of wood of any size, so that our noble forest trees which are in reality a great gift to man, will soon be saved from needless and ruthless destruction by fire. With our economical stoves, the smaller limbs and unsaleble parts can be used to advantage upon the farm. Wherever land is so valuable that it pays to pull stumps and roots, rather than let them decay in the ground, they ought to have some value as fuel. Yet still there is more or less refuse, and what shall be done with that, if fire is to be excluded from clearing the land? Let it remain upon the land and decay. Likewise, for the same reasons, bushes, brakes, &c., mowed in pastures, are allowed to remain. They do not materially interfere with cattle in feeding, while they form a sort of light mulch which helps shade the land from the sun, protects it from wind, keeps it moist and warmer in cold weather,— conditions which favor the growth of grass. Plaster and other fertilizers can be sown on the fallen bushes, and thus the original stock of vegetable matter may be retained and increased. Again, where a quantity of trash in the form of twigs, trimmings of trees and coarse vegetation accumulates in the orchard or about the house, unfit for stove or hogpen, it should be moved to some convenient place and piled up. By mixing a little lime, plaster, salt or ashes and giving an occasional overhauling, the whole will soon be reduced to fineness, especially if made in a wet place.

Nor in reclaiming meadows and bogs, even where the vegetable matter is in excess, is it expedient to burn any of the parings, either to get rid of them or for the small quantity of ashes they will yield. The toughest sods are needed for filling holes and low places and making roads and bridges, and as the adjacent upland is almost always deficient in vegetable matter, the more tender parings and surplus muck is needed to enrich it. It can be carted directly to it, or perhaps what is better, first worked up in hogpen or barnyard. The work of reducing them to fineness can be hastened by chopping. When slightly stiffened by frost a strong man with a large axe can cut up several cords in a day, and what was apparently almost indecomposible without the assistance of fire is thus speedily rendered fit for use.

In these ways it is possible to increase that black, rich mould so much prized in new land; while the surest and quickest way of exhausting any soil is to burn it often. Burn frequently and crop continually, and even our most fertile fields can be converted into barren wastes. And what in nature has a more dreary and desolate aspect than these parched and arid fields, where only the scantiest vegetation barely exists. No man has a right to burn, and complain of the poverty of his soil; nor can any one afford to follow such a wasteful and exhausting operation, even if he is willing to buy back the lost material in form of special fertilizers at three to five cents per pound, and strawy stable manures at six to ten dollars per cord. Even if any one finds a present gain from burning, it will ultimately cost him or his successors years of patient toil to restore the equivalent thus destroyed. Most assuredly, then, fires are to be dreaded in the soil, as well as in our forests or among our buildings.

July, 1867. N. S. T.

—In Florida spring planting begins February first, for corn, melons, beans, squashes, and such things as will not bear frost; while peas, beets, turnips, &c., do better to be sown in September.

EXTRACTS AND REPLIES.

SUCCESSFUL BEE-KEEPING.

At a late visit to the apiary of Mr. John J. Gould, of Wenham, Mass., I saw and heard so much that was interesting to me, that I think a brief notice will interest the readers of the FARMER. Though engaged in the business of manufacturing, Mr. Gould finds time to manage an apiary of some 85 swarms, and having kept bees for some 35 years, his practices and suggestions may be safely received as practical. He uses the Langstroth hive, but with an improvement of his own, which he calls the "double hive," on which he can put fourteen boxes of a size to contain three and a quarter pounds each of honey. He has also developed and made more practical than has ever been done before, an idea suggested by Mr. Langstroth. He has a sort of drawer, about three inches deep, filled with two rows of corn cobs—this drawer has only light slats for a bottom, just sufficient to keep the cobs in place. The honey board is removed and this drawer put in its place. The bees will attach themselves to these cobs, which serve the double purpose of keeping them warm and carrying off the moisture. With this simple arrangement the hives remain upon the stand all winter, with safety, without any other protection.

From forty-five of his hives, Mr. Gould has already taken this season one ton of honey! But last year, although he expended some $200 upon his bees, they laid up no surplus honey. This year he expects to realize at least one thousand dollars. We had the pleasure of seeing about two hundred of these boxes in a finishing room, where two interesting young ladies were labelling them for market. Cannot the FARMER send a photographer to Wenham and give us a *sweet* picture,—one that will induce others to engage in bee-keeping?

Mr. Gould has the Italian Queens and has been very successful in rearing and transferring them.

W.

SWELLING AFTER SCRATCHES.

Can any one tell me through the FARMER what will cure a swelling on a horse caused by scratches. I have a valuable horse that has one of these swellings. He had the scratches some eight or ten weeks ago, when his leg was as large as a common stove pipe, but the swelling is now considerably reduced. Is there any cure?

JONES KINGSLAND.

Ferrisburgh, Vt., July 27, 1867.

REMARKS.—In the treatment of diseases it is very important to know the cause and nature of the disease, and we think the following somewhat lengthy remarks by Mr. Youatt on the subject of Grease, or Scratches, will interest not only our correspondent, but all who have the management of horses, especially those troubled with this filthy disorder, which we believe is far less common in this country than in England, where Mr. Youatt wrote.

In explaining the cause of Scratches, or Grease as it is called in England, he says, "there is a peculiarity about the skin of the heel of the horse. In its healthy state there is a secretion of greasy matter from it, in order to prevent excoriation and chapping, and the skin is soft and pliable. Too often, however, from bad management, the secretion of this greasy matter is stopped or altered, and the skin of the heel becomes red, and dry, and scurfy. The joint still continuing to be extended and flexed, cracks of the skin begin to appear, and these, if neglected, rapidly extend, and the heel becomes a mass of soreness and ulceration.

The distance of the heel from the centre of circulation, and the position of the hind limbs, render the return of blood slow and difficult. There is also more variation of temperature here than in any other part of the frame. As the horse stands in the closed stable, the heat of this part is too often increased by its being imbedded in straw. When the stable door is open the heels are nearest to it, and receive first, and most powerfully, the cold current of air. When he is taken from his stable to work, the heels are frequently covered with mire and wet, and they are oftenest and most intensely chilled by the long and slow process of evaporation which is taking place from them. Everything that has a tendency to excite inflammation in the skin of the heel is a cause of grease. No one, then, can wonder at the frequency with which the heels, especially the hind ones, are attacked by inflammation, and the difficulty there is in subduing it."

Nor need we wonder that after the chaps or cracks have healed, that the legs should continue swelled. The horse may be benefited by gentle purgatives, or a few weeks at pasture. The local applications should be directed to the abatement of inflammation. Mr. Youatt recommends highly a poultice of carrots boiled soft and mashed, "diligently used night and day," also a flannel bandage evenly applied over the whole of the swelled part.

WHAT SHALL I DO WITH THE BIRDS?

This is a question on which I have bestowed much thought. They took my early peas, and then my cherries and early fruits to such an extent that I began to fear that I stood a very small chance for a tithing of the crop. They were so very cool about the matter, too, that it seemed to me they supposed the title was vested in them, and I had no rights to either vegetable or fruits, which birds were bound to respect. Be this as it may, one thing is sure, they were bound to have the first chance, for however early I might appear upon the ground I was sure to find they had the start of me. I must confess to having my patience severely tried, and my faith shaken in the theory of their destruction of insects being a compensation *to me* for the loss I *knew* I was sustaining. These losses were incontrovertible facts; their murderous work on insects and other foes to vegetation, an open question, so far at least as some of them are concerned—the robin, cat-bird, oriole and wren, for instance. I own to making inquiry of my son one evening respecting powder, and shot and gun, with malice aforethought towards them in my heart; but the night's sleep so far modified my purpose that I gave it up for the present. I have ever defended the ungrateful rogues, and begged the boys to spare them, contending that they paid in song for all the fruit they took, on the principle that the *honking* of a neighbor's wild gander paid for his keeping! If a person happens to be located where not much fruit is cultivated, and tries to raise some himself he will find he is a serious sufferer, and will be likely to suspect that the birds located their nests just around him

for the purpose of having their young at hand to initiate into their most questionable practices. I am not sure if another season's experience should correspond with the past, but I shall have recourse to what is said to be the first law of our being—*self-defence.* K. O.

Broad Brook, Conn., July 20, 1867.

WOOD FOR PIGS TROUGHS.

What kind of wood is best for a hog's trough, and for the flooring of their pens? My hogs, in attempting to make improvements in their pen, not having any great mechanical skill, have nearly demolished it. It must be reconstructed soon. I should be glad to receive an answer to the above questions before I commence the important operation.

Suppose an animal's left eye should be diseased, I should like to know whether Mr. Breed would apply the butter to the left, or right ear. I don't know what he means by "opposite." E. B.

Derry, N. H., 1867.

REMARKS.—A feeding trough for hogs properly made of chestnut or white oak plank, and set up from the ground so that the air will pass around it, will last many years; how many we do not know, for we have not had one decay yet under the above conditions. Our pig troughs are always under cover, and as the swine are fed liberally, and *always come to the ground* when they wish to, the trough that was made ten years ago, is as smooth now as the day it was made. It was made of oak.

The treatment which swine give to their troughs depends in a great measure upon the circumstances which surround them. If they can always retire to a dry bed when they wish to, are fed plentifully, and can come to the ground as they please, they will remain quiet and grow rapidly. As long as grass and other juicy plants continue, they should have them every day, and two or three times a day they would be eager for them.

RAISING TURNIPS.

At this time, (July 20), wise farmers are thinking about the turnips for next winter. I have tried many ways to raise them, and find almost unvaried success in the plan of my last adoption. When my haying is a little out of the way, I select a plot of ground as much as I think I can manure well, and turn it bottom up, usually using Nourse's Iron beam Swivel plow with the subsoil attachment. The soil is well turned, and the subsoil is well broken. With a good share harrow, the ground is thoroughly pulverized and leveled. Twenty loads of 40 bushels each of fine manure are put to the acre. This is thoroughly mixed with the soil by harrowing or cultivating. I then mix one pound of purple-top strap-leaf turnip seed with sufficient herds grass and red top for the acre, sow it and brush it in, with a light brush. The roller is then passed over it, and the turnips are left to take care of themselves till they are in danger of being frozen. They are then pulled and put into the barn cellar and barn floor, tops and all. Boys are hired at two or three cents per bushel to top them and put them into the root cellar. I can find a use for them in large quantities during winter. My hogs eat them, my cows eat them, my sheep eat them, and my horses are fond of them. Sown the first of August, they are sweet and hard, and will keep so nearly all winter. For earlier use, they should be sown the first of July. By this arrangement no crop is lost. The first season we get two crops, one of grass and one of turnips; the second season a better crop of grass than has grown before; the third season, a crop as good as need be. I would recommend this method to all farmers. It is a cheap and sure way of raising turnips, which are very desirable in the winter. And it is a cheap way of making a worn out piece of land into good grass. This may appear too late to do much good this season. I have known good turnips raised from seed sown as late as the tenth of August, here in New Hampshire. My neighbors are following my example, which may be good evidence in my favor. Z. BREED.

Weare, N. H., 1867.

DEER AND HOGS TO KEEP OFF THE CURCULIO.

Your correspondent, Thomas Ellis, Esq., of Rochester, Mass., writes so feelingly on the subject of that sneaking curculio, that I cannot refrain from giving him my experience, which, like that of a great many others, may cost more than it will come to.

Some twenty years since, I was at the house of a friend at the season of the plum, and was invited to partake of some, which were very nice. I inquired how he succeeded in raising perfect plums, and he at once told me the secret. "See that tub of water? I throw the plums that fall into the water, and that prevents their going into the ground to again come forth to do their work of mischief." Years ago, I had an orchard of about thirty trees, mostly of the Rhode Island greening variety, which did well and bore abundantly, until the curculio came for his share, which proved to be the whole. I believe he did not leave me a sound apple. At this time I had an opportunity to get a pair of deer, which I improved, and after protecting every tree against their gnawing propensity, and building a picket fence six feet and a half high, I put them into the orchard, and by the second year I had no more trouble from the curculio.

If Mr. Ellis does not like the luxury of deer-keeping, a few hungry hogs will produce the same effect. ALFRED BAYLIES.

Taunton, Mass., July, 1867.

SELLING POULTRY.

Farmers are selling their poultry too cheap. The middle men, who are traversing the country and buying up lots of poultry, get the best end of the bargain. They grind the faces both of the producer and the consumer. At the present retail prices for beef and poultry, the latter is the cheaper of the two, and farmers should hesitate before they sell for about *one-half the price* which the consumer is obliged to pay. Besides, poultry is regarded as more of a luxury than either veal, pork, or beef, and farmers should therefore demand for it relatively a higher price than they usually obtain. A LOVER OF POULTRY.

Waltham, Mass., July 24, 1867.

REMARKS.—Both among the producers and consumers of poultry there are some very fastidious people. And if the farmer and his wife, and his sons and his daughters, or the consumer and his wife, and his sons and his daughters, happen to dislike the job of dressing a lot of poultry, we do not suppose that Mr. Lover-of-Poultry, backed by the editorial force of the NEW ENGLAND FARMER, can prevent them from employing somebody else to do it for them. Still the questions raised by our correspondent are pertinent and forcible. The "art and science" of marketing is not sufficiently studied by farmers, or by consumers either,

and if any of our readers can suggest any improvement in the present manner of marketing poultry, or produce of any or all kinds, we shall be glad to give them a hearing.

WHAT AILS MY GRAPE VINE?

I have a Concord vine seven or eight years old, that has borne well four years. In the spring of 1866 it started to grow as usual, but soon a portion of the leaves began to turn yellow, and the vine did not seem as thrifty as usual. It nearly recovered, however, before autumn, and I gathered twenty-five pounds of grapes from it, although, owing to the unfavorable weather, they did not ripen well.

I supposed the sickly appearance of the vine was occasioned by the preceding hard winter; but this summer it looks still worse. It was laid down last fall, and it came out looking well in the spring. But it did not start as usual, and when it did the leaves looked yellow and sickly, and continued to appear so.

My plan of pruning has been to cut back in the fall to two eyes, training two arms horizontally, and the new shoots perpendicularly. I have always kept it well watered with sink water or soap suds. The wood looks healthy. Will some one inform me what is the disease, and the remedy?

L. VARNEY.

Bloomfield, C. W., 7th month, 20th, 1867.

TRIALS OF SUPERPHOSPHATE.

A Worcester subscriber in the FARMER of July 13, says that he "wishes to use superphosphate of lime on *good ground*, where rye is to be sown," and inquires how much to use, and how to apply it. I never had any experience with it until this season. Last spring I bought one barrel of Bradley's patent and sowed upon grass on a low meadow, leaving some places (and marking them) where none was applied, so as to test it; but could not discover a particle of difference in the crop where it was applied and where it was not. I also bought two barrels of Bradley's XL, for corn. One barrel I used clear, putting a tablespoonful in each hill; the other barrel I mixed with hen manure, plaster and loam taken from under a stable-floor, making five barrels of the mixture. The most of both kinds I applied to corn planted in an old pasture which had not been plowed before for forty years. The corn is best where the mixture was applied. I staked off some rows on good land, and used some of the phosphate on a part, clear; some of the mixture on another part, and put ashes in the hill on another part; leaving 4 rows between without anything, and intend to harvest each plot separately and note the result. But now, where I put the mixture, the corn is much the largest, and where the pure superphosphate was used it is smaller than where nothing was put in the hill. From my experience, thus far, I would advise my Worcester friend to use very little superphosphate, and to *reduce* it with as much hen manure, plaster and scrapings from under stables as he can get.

Westminster, Vt., July 26, 1867. C.

BEE-BREAD.

Twice within ten years a large portion of our bees have died for the lack of sufficient "bee bread." We are *sure* they died, and *think* the want of that part of their usual supplies was the cause. Syrup made from refined sugar is a substitute for honey. Will you, Mr. Editor, or any of your correspondents please to tell us of a substitute for pollen; and tell us, also, if bees kept in buckwheat districts ever want for "bee bread" in their hives in the spring. Bee keeping is a very uncertain source of profit while we depend entirely upon the usual sources of supply for honey. It is not often that a good swarm will fail to secure enough for itself in the worst seasons; yet there are times when good swarms fail to do that. They must be fed; the little they really need *must* be given to them, or they die. There is no trouble in supplying honey, and it can be done at any season of the year, but economy will choose a time to feed. What can we do for a supply of "bee-bread?" Tell us that, and you have made bee keeping comparatively safe; for we have no fear for the moth, no trouble with cold in winter, no foul brood or other diseases among our bees; and we do not fail of a bountiful supply of honey from the usual sources oftener than we fail with our stock or crops of any kind. How to get through the hard seasons, and preserve our stock of bees until a good season will yield a profit, is the great question with bee keepers. F.

New Hampshire, July, 1867.

SHOULDER SPRAIN IN HORSE.

Will some of the contributors to the FARMER tell me how to cure shoulder sprain in my horse? He will be a little lame six months, and then well six months, and then lame again. R.

July, 1867.

REMARKS.—Youatt and Spooner say that bleeding from the vein on the inside of the arm and mildly blistering the shoulder generally succeeds in effecting a cure.

CROPS IN NEW HAMPSHIRE.

Our hay crop is nearly secured, and is from twenty-five to fifty per cent. better than last year; depending much upon the amount of spring and fall feeding to which the fields have been subjected.

Potatoes are looking very well. Grain good, and early pieces ready to be cut. Corn is generally good, but late; some pieces have not been hoed at all, planting was so late and haying so early, which farmers were disposed to attend to, though at the neglect of other things. We hear no complaint for the lack of fruit. Small, wild fruit of all kinds are very plenty. F.

Mast Yard, N. H., July 26, 1867.

A CASE OF CONSCIENCE.

Old Farmer B——, of ——, sold a pair of oxen to a man in a neighboring town, and agreed to deliver them to the buyer. Having delivered the cattle according to agreement, he was jogging homeward, when he suddenly stopped his horse, and, thinking aloud, remarked, "There! there! I forgot to tell him, after all! Them cattle are confounded rogues. I ought to go back and tell him; I guess I will; no, I won't; for he'll find it out—he will." EAVESDROPPER.

——, *Mass., July* 25, 1867.

NOTES FROM MAINE.

Haying is the all absorbing work with the farmers just now. The mowing machines—and many kinds too—are put to the test of *work*, and admirably are they doing the required task. Recent improvements in their construction, and the increased skill in working them, enable them to be used advantageously upon many fields where it has hitherto been thought impracticable.

The drag rake, the horse rake, and the horse pitchfork are being pressed into service wherever available.

Haymen get $50 to $65 per month, or $2 to $2.50, and some $3 per day, fair weather.

The hay crop is from one to two-tenths better than last year, and is selling, direct from the fields, for $12 to $16 per ton.

The cultivated crops look well generally, though not quite up to time in maturity. It is better growing than haying weather, the last half of July.

The apple crop will be very light,—not up to last year; other fruits, perhaps, a little better.

The season, thus far, has been a singular one. Cold wet May; June a fine month for all work; July hot days and cool nights; and so during all the season the nights have been cold and cool, yet vegetation is luxuriant. O. W. TRUE.

Farmington, Me., July 30, 1867.

WINTER WHEAT.

We hear great stories about wheat in the South, West and at other points of our country. It seems to be a general time of rejoicing, for it is pleasant to know that we have an abundance of the prime staff of life.

Now it is pertinent to ask the question, how much wheat have the farmers of New England raised this season? Could they answer, from two to four acres each, they would have no occasion for a barrel of flour from the West, for I maintain that four bushels wheat weighing 240 pounds, allowing 44 pounds for bran, is a fair estimate for a barrel of 196 pounds flour. But a portion of this bran would be consumed by most families who consider wheat meal as far more healthy than fine flour, at least for a change.

Farmers who have been paying four to four and a half dollars a bushel to Western farmers the past year, you can afford to raise wheat for one dollar and fifty cents With the exception of seed, a wheat crop can be raised at the same cost and labor that is expended on other crops, but when harvested, it is far more valuable. Is it not an object to try? Several (of the few) that have attempted it, have come out with their statements of 20 to 40 bushels to the acre. Why, then, halt any longer? Sow a peck, half bushel, or a bushel, in one corner of your old mowing land as a beginning. The rowen you turn in is a good coating of manure,—sod wheat is always best. Let the grain lie in brine ten hours, rake it in ashes or slacked lime. Sow at the rate of two bushels per acre, and cultivate two or three inches deep, from last week in August to tenth of September, depending somewhat on the strength and earliness of your soil. You are then safe from winter kill. Get a good growth this fall before the ground freezes, and your crop is safe as winter rye, and you will get double the quantity to the acre that you generally raise of rye on your light, poor soils.

Our grain dealers talk of a short crop in Europe. Should it prove so, prices will not range low with us. HENRY POOR.

Brooklyn, L. I., Aug. 5, 1867.

WHEAT RAISING BY A LADY IN MASSACHUSETTS.

I do not know how to write for a newspaper, but I want my farmer sisters, if not all farmers, to have the benefit of my experience in winter wheat raising. My husband often talked about it, but never had sufficient hope or courage to make the attempt. My crop has been very large this year, to my delight, and I could not help sending the "widow's mite" for the benefit of any who may be in doubt. I shall persevere, having had the sad experience of paying twenty dollars a barrel for flour the past year.

The NEW ENGLAND FARMER is a treasure to me, having learned from its correspondents the valuable lesson of wheat raising, as well as many others, to help me in providing for my family. Many a mother has to provide for her family from farm products, and I wish they could look upon my wheat field, take courage, go and do likewise. Should I live till spring, I shall try spring wheat. I feel great delicacy in sending this letter, but hope it may do good to others with small means.

———, *Mass., Aug.* 6, 1867. MRS. WM. O.

REMARKS.—The above contribution was as gladly received as were the "two mites" of a "certain poor widow" of old. Compared with the "offerings" of those who "cast in of their abundance," this brief article may appear small; but who that has the experience of paying twenty dollars a barrel for flour will deny that this modest writer "hath cast in more than they all."

CURE FOR HOLDFAST IN CATTLE.

Having been successful in curing two rather bad cases, one on the lower and one on the upper jaw of different animals, I feel it my duty to my brother farmers to communicate my course of treatment. At night I applied good home-made soft soap to the swelling, rubbing it thoroughly into the hair and completely over the swollen part. The next morning the soap was carefully washed off and out of the hair with cold water. This followed up daily, soon removed the swellings in both cases after they had got to be of good size.

J. H. MARSHALL.

North Easton, Mass., Aug. 1, 1867.

REMARKS.—If this shall prove as effectual with others as with our correspondent, his brief statement must be of great value to stock raisers. It is commonly believed by farmers that these swellings, known as Holdfast, Stickfast, &c., are occasioned by the old teeth being retained when the new ones are starting, causing the new teeth to grow out of the side of the jaw, thus causing irritation, which results in inflammation and swelling. It may be well, therefore, in the first place, to see if there is anything wrong with the teeth.

CURE FOR LAMENESS IN A HORSE'S SHOULDER.

Several years since I bought a horse in a condition similar to that described by "R.," in the FARMER of Aug. 3. After standing still a few days my horse did not show any signs of lameness, but when driven a few miles quick, or when he became tired with travel, he would be quite lame.

I bathed the entire shoulder with equal parts of "Mustang Liniment" and alcohol, well mixed, and warmed or dried it in with a hot brick, being careful not to let the brick touch or burn the skin, rubbing at the same time. A few applications, once in two days, letting the horse have a loose stable, and keeping him as quiet as convenient, cured him after a lameness of eight or ten months. The application may not be of service in another case, but as it cured my horse I would make it known to "R." and he can try it or not as he pleases.

I should consider the less blood-letting and blistering the better, if the animal was in good health otherwise. A.

Montpelier, Vt., Aug. 5, 1867.

OATS TURNING TO RYE.

I have n't received any information through the FARMER concerning "scattering rye on oat land," but have been told, however, that the few oats that chance to live in the ground through the winter,

germinate in the form of rye. What do you say to that? G. S. Bennett.

Royalton, Vt., July 29, 1867.

Remarks.—We never knew of oats turning to rye, nor of corn turning to potatoes; but both and all "turn" up strangely sometimes, and we hardly know what they sprang from. May not the "scattering spears of rye growing on land which the year before was seeded down to oats," germinate from kernels of winter rye sown with the oats or the grass seed? Who can furnish the desired information?

WHEAT TURNING TO CHESS.

The party that complained of "chess" in his winter wheat should have passed through his field and plucked it by the roots. No one can mistake it, and there is no necessity of having it. "As ye sow, so shall ye reap." H. P.

Long Island, N. Y., July 27, 1867.

LIME AND SALT FOR CURING HAY.

New England Farmer Office,
Boston, August 1, 1867.

Hon. Simon Brown,—Dear Sir:—Mr. E. L. Metcalf, (E. L. & O. F. Metcalf) of Franklin, Mass., called upon us to-day, hoping to have seen you. He wishes to consult you as to the chemical action of salt and lime as a preservative of green hay or grass. As to the fact of the curing properties of the compound he has no doubts. This he thinks his experience the past and the present season has fully demonstrated. But he wishes to know *how* it operates, and whether it can in any way prove injurious to the stock which consumes hay cured as he is now curing his. His practice was stated substantially as follows:—

He commences with one or two machines, according to weather, help, &c., as soon as the dew is off, in the morning, and puts it all into the mow the same day if possible. If impracticable to get it all in the day it is cut, he puts it into cocks which are capped. This is carted the next day—the cocks never being opened. He cuts about 60 tons, and puts in from 4 to 8 loads per day, and applies a mixture of about four quarts of air-slacked lime and two quarts of salt per ton. The other day he commenced raking before the machine had finished cutting, and, much to the alarm of his foreman and other hands, put it directly into the barn. Yet with the application of the lime and salt mixture the hay thus hurried in does not heat, sweat, nor become musty.

Last winter he kept on hay thus cured, 4 cows, 6 oxen, 2 two-year-olds and a horse; all of which did well and were healthy. Indeed, he said the stock would pick out this hay from that cured in the ordinary style. He sold a ton this spring to an old farmer in his neighborhood, who, after having used most of it, asked him how he happened to sell rowen. On being told that it was not rowen, but ordinary first-crop hay, and that, too, which was cut rather late in the season, his neighbor remarked, well, it was so soft feeling and fresh looking, that he really thought it was rowen. After being told that the hay was cut and put into the mow as above described, the man remarked that he should certainly try the salt and lime himself, for he never had any hay in the spring which his cattle ate so greedily.

By way of experiment, Mr. Metcalf exposed a small stack of hay thus cured in the mow to the open air on the north side of his barn, and is satisfied that it resisted the effects of the weather far more effectually for the liming; and infers that such hay would bear transportation much better than hay cured as usual.

With this process and with modern implements, he says he can put his hay into the barn at an expense of $2 per ton.

At his request, I have submitted the question of the chemical action of the lime and salt on the large amount of moisture which grass is known to contain, to Dr. James R. Nichols, who has promised to consider the subject, and reply in the next number of his *Journal of Chemistry*.

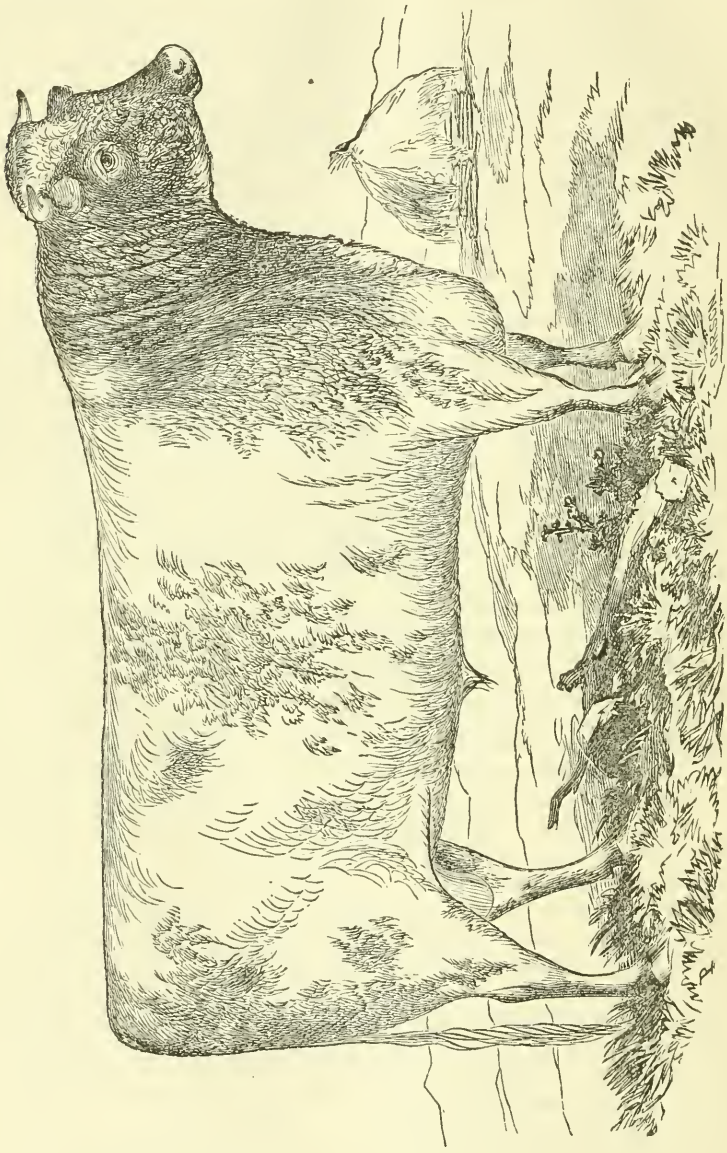
Mr. Metcalf left a pressing invitation for you to call and examine his barnful of hay.

I have frequently salted hay that I thought was rather green, but have never tried lime. I notice that in an article, written by Mr. X. A. Willard, of the Utica *Herald*, doubts were expressed as to the expediency of liming hay. Have you ever experimented with it?

Yours, &c., S. Fletcher.

On the Farm, Concord, Aug. 9, 1867.

I think we had better publish the foregoing. I am so much interested in the statement that I have put down one scaffold of hay in the *lime and salt*, and if opportunity offers shall be most happy to compare results with the Messrs. Metcalf. We shall cut about eighty tons of fodder this year, and just now I am exceedingly busy; as this season, especially, we find it necessary to "make hay while the sun shines." Yours, truly, Simon Brown.



ROAN PRINCE, 6370 Vol. 7 A. H. B.

The animal above represented is the property of Joseph A. Harwood, Littleton, Mass., winner of the Sweepstake Prize offered by the Middlesex County Agricultural Society, at Concord, September, 1866, for the best bull of any breed; also, winner of the first prize as the best Short Horn Bull, by the same society. Roan Prince was got by Rising Star, 5129, out of Lady Sale 8th, by Second Prince of Orange, 2183,—Lady Sale 6th, by Red Knight, 890,—Lady Sale 3d, by Imp. Third Duke of Cambridge, 1034 (5941,)—Imp. Lady Sale 2d, by Earl of Chatham, 10,176, &c.

The above picture is a correct likeness of this magnificent animal, as taken from life. He is now two years old, and was purchased by his present owner of Hon. Daniel Needham, of Groton, to whom he was presented by the Provincial Societies of Agriculture of Canada.

For the New England Farmer.

SUCCESS IN FARMING.

Can young men succeed better in other callings than as farmers?

I see you print, (Feb. 16, 1867,) the following, which is the concluding sentence of my article on "Renting Farms:"—

The same amount of study, tact, talent, energy and enterprise that suffices to make a man moderately successful in a professional or a mercantile career, will place him in the front rank of the tillers of the soil.

You then remark that it "is going the rounds of the agricultural press," and that you "wonder at it, as you do not believe it is true." Also that you "think it would be full as correct to transpose the sentence, and say, "that the same amount of talent, tact, industry, energy, economy and enterprise that suffices to make a man a moderately successful farmer would place him in the front rank of the professional or mercantile classes."

It is scarcely necessary to say that I was much surprised to see this. I was trying to show that farming was the best and surest business for farmers' sons to follow. That "the professions are so crowded that it is often many years before an opening is found, and a paying business obtained." And that "these difficulties have kept many talented men in the back-ground for years, or finally driven them into other business." While it was not "much better in the mercantile business," as "every opening for or avenue of trade is crowded and overdone." And that both are so crowded that "competition and combination do their utmost to prevent the success of the beginner." With other facts and arguments offered to prove that farming was the surest and easiest to get started and succeed in; and winding up with the sentence in question.

Now, am I mistaken? Will young men find it easier, and be surer to obtain a comfortable competency, by entering into trade, or the professions? Remember that it is not the abstract question that I have in view, but the practical; that I try to consider these matters as I find them. No doubt but the successful merchant or lawyer gets better paid in money and honor than many successful farmers. Political economists say the reason for this, is, that it takes a costly preparation in time and money to secure such success. Many farmers will say that the so-called intellectual classes so rule society as to secure better pay for their labor. But this is not the point. If the successful lawyer can get more money for a fair day's work than a farmer gets for from ten to one hundred times as much labor, as is sometimes the case, it does not prove that it is best for young men to become lawyers; for practically such lawyers are the exception; they are few and far between. There are so many lawyers, and competition is so close, sharp and persistent, that only those who have great talent, tact and ability that are especially adapted to the profession, aided by intense and persistent study, ever attain to the "front rank" in their profession. And then such "leaders of the bar" get about all the best business; while the rest, as a whole, have rather short pickings.

Take this county for instance. Out of some twenty-five or thirty lawyers, there are only two or three that are really successful; as many more moderately successful—worth as much as average farmers; while the rest are not as well off, nor do they make as much money as ordinary farmers. Doctors are not doing as well as lawyers. Merchants about the same; that is, a few succeed—many fail. But on the other hand, farmers are generally in good circumstances, and making money. Farms may average one hundred acres each, and, including stock and tools, may be worth nearly or quite $100 an acre, while many have several hundred acres, besides several thousand dollars at interest; and this, too, in a county that has been principally settled and cleared up during the last forty or fifty years, by men that had but very little means to start with; so that nearly all the property now owned by the farmers has been made by the present generation; while the failure of a farmer of ordinary industry and economy is scarcely ever heard of. So that, in fact, farmers are nearly all moderately successful, while this is the case with only a small share of the lawyers, doctors or merchants.

I know a farmer not yet forty years old who, with a capital of only $500 to $600 to begin with, has made between $30,000 and $40,000 by farming; while there is not a lawyer or merchant, of the same age, in the county that has got together as much money. This farmer has a moderate academical education; but no special study or preparation for his business, more than other sons of common farmers, while many of the other classes have been well educated, and by study and practical training, thoroughly prepared for their business; and some of them are men of superior ability and intelligence. So there can be but one reason why they don't succeed as well in proportion as the farmers, and that is they don't have the same chance,—they don't find the same opening for them to make money according to their tact, talent and ability. The farmer found plenty of business from the beginning—the others could not. There were enough older, experienced and well established lawyers, doctors and merchants, to do all the business, who had it in their own hands; and being men of much talent,—some of them of decided ability,—and having the confidence of the people, they could not be crowded out nor deprived of patronage. Hence new aspirants, however talented and thoroughly prepared, often have great difficulty in getting a good start in business.

Again: we have many hundreds of moderately successful farmers in this county, like a

neighbor who has made some $10,000 or $12,000 during the last twenty years. He has but little training, and not a large amount of general intelligence, but is industrious and frugal; qualities which have enabled him to become "a moderately successful farmer." Yet it would be worse than useless to tell any one that is acquainted with his mental ability, that it is possible for him to attain to the front rank of the professional or mercantile classes.

If farmers are thus moderately successful without any special education, study or training for their business, how will it be when they have the full benefit of these advantages? Law and medical schools, and commercial colleges, are of great advantage to the classes they are intended for. May not agricultural schools be a great help to young farmers, also? I believe they will be, and that thousands that otherwise would be rather ordinary farmers, might, with their help, attain to the front rank of their calling.

True, men have succeeded in all pursuits, without any special education or training for their business. But while this has only been the case in regard to few and rare exceptions in other callings, it is the general, if not universal rule with farmers—that is, as far as success is attained. In fact, I believe we have no farmers that have been thoroughly educated and trained in agricultural schools for their business; that we have yet to learn, at least practically, the full advantages of such preparation.

But do the editors of the FARMER intend to encourage farmers' sons to leave the farm, by holding out such inducements as, that it is easier to reach "the front rank in the professional or mercantile classes," than to become "a moderately successful farmer?" Not only are all kinds of business avocations crowded, but we hear of thousands in the cities that can't find anything to do. But a few months since the *Tribune* said there were 40,000 idle men vainly seeking employment in New York city. And on the tenth of April the *Weekly Tribune* said:

"And now let us once more exhort the surplus population of this and every other great American city to disperse. There are at least one million of them this day hanging on where they are not wanted, and are not likely to be. 'Can't you give us something to do?' is their incessant whine, when there is work enough and good pay for all, if they would only go where it is needed. They cannot find work on a few square miles of pavements, because there are too many people here and too few on the farms and in the rural factories and work-shops. The world does not need so many clerks, salesmen, bookkeepers, music-teachers, governesses, &c., &c., as seek employment in those capacities; so thousands must be starved back into productive labor; and the sooner this is done the better for us all."

Now this is a very serious matter in the cities; and yet it is the case when help is very scarce and high in the country. Here wages are about double the price paid before the war, and men very scarce at that, so that one of the most serious difficulties farmers have to meet is the scarcity and high price of help. Now does the FARMER wish to add to this difficulty by encouraging a still greater number of young men—farmers' sons—to leave the farm? And will not this be likely to be the case with those that believe there is a better chance to succeed, in other occupations than in farming? But still as the general tenor of the editorials of the FARMER has been in favor of "sticking to the farm," it may be there is some mistake—some misapprehension in this matter that may be explained. F.

Western New York. 1867.

REMARKS.—We admit the force of our correspondent's strictures, from his standpoint. We contemplated the subject under a different aspect—an aspect in which we think the occupation of the farmer is too often contemplated—that of its inferiority as compared with the other vocations of life. Our remarks were the result of a strong conviction that those who wish to satisfy the ambitious young man with agriculture would do well to pursue some other course of argument than that which demonstrates the assumption that "any fool is bright enough for a farmer,"—or that the "front rank" of that profession may be attained with a very small "amount of tact, talent, energy and enterprise." To such teachings we trace the regretful remark, so often made both by parents and children, and the sense of degradation it implies, that "William" or "George" or "Joseph" "has no trade, as he always had to stay at home." After a familiar practice of perhaps thrice seven years in every branch of farming, and with every agricultural implement, the poor boy has no trade,—no "special education, training or study for his business,"—while he who drives pegs into a shoe or shoves a plane upon a board is entitled to a rank several degress above that of the "unskilled laborer."

True, Mr. "F.," the NEW ENGLAND FARMER most heartily advises the boys to stick to the farm, not because it is the place for blockheads and dunces, but because it is an appropriate and promising field for study, tact, talent, energy and enterprise; while at the same time it cautions the "professions" and all who have not "learned the trade," against engaging in farming with the belief that it is an easy thing to attain "the front rank of the tillers of the soil."

DARK SIDE OF WOOL GROWING.

A correspondent of the *Prairie Farmer* says he was induced to engage in the wool-growing business from "being taken" with the way in which the beauties and profits thereof have been presented by "Wool Grower" and other writers upon the subject, during the past six or eight years. But being "superlatively disgusted with sheep and the sheep business," he proceeds to detail his experiences and convictions in the following bill of particulars:—

I did not buy sheep at as high figures as did many other men at the same time, but I bought better ones than many others did for the same money. I believe I have fed and handled them with proper care, but the thing don't come out as I was led to expect by "Wool-Grower's" ciphering. He used to tell us that in a tolerably good sized flock a man ought not to lose over five per cent., and in a large flock not over ten per cent., in a year. I started with 1400, which, perhaps, might be called a large flock; now I have never been able to keep my losses anywhere near as low as ten per cent. I wonder if "W. G." ever kept, on paper, an account of every sheep which he lost in a year?

As a fellow-sufferer and neighbor says, "Sheep *will* die in spite of thunder." During the summer they do not go so very fast; in fact if you do not put each one down on paper the very day the carcass is discovered, you will be inclined to think, in the fall,—O, I have not lost many; perhaps a half a dozen. In the early part of winter and clear up to March, you will feel as if you were getting along swimmingly, but don't lay any flattering unction to your soul until you reach the Ides of March, the same Ides which Cæsar was to beware of. About this time, perhaps, you think it well enough to begin entering in your book, dead sheep. Like an innocent, you think, once April comes in and your flock can get a bite of grass, the mortality of sheep will cease. The next two months undeceive you terribly, and you feel as if sheep laid down and died from sheer spite.

When "lambing-time"—I believe that's the word—arrives, you are expected by all good authorities to raise 75 per cent. You are just green enough to keep a book account here again, so as to see whether you are doing what is expected of you. For awhile you feel first-rate; your book reads, so many ewes have lambed, so many lambs living; in a week or so you have to go back to your book and chalk out some of those set down as living, on account of the natural perversity of the whole sheep kind. which will persist in dying without any show of reason. Putting down, rubbing out and altering, you run your now badly speckled book up to the time when all have come and they are ready for "trimming." On finishing this job you proceed to count your pile of tails; as the pile diminishes, how your face lengthens! "Only so many!" in a mournful tone of voice; then you consult your book; book says *so* many; then you recount your pile of tails and continue glancing from book to tails until your head swims. Worse than all, you reflect, they cannot be considered raised as yet, but two or three months must elapse before weaning-time. At weaning-time you take a fresh count,—have given up book by this time—and sit down to figure your year's increase. The number of increase has to be expressed by the algebraical sign of minus before it.

But I won't particularize any farther; it is sufficient to say that in my four years' experience, I have never found anything to come out as I had been led to expect by enthusiastic wool-growers. My losses have been greater; my percentage of lambs less; my weight of clip less; the price obtained for my wool less, and I have been generally and particularly disappointed. I have discovered, among other things, that no farm will carry as many sheep as men tell (for I forget how many "Wool-Grower" said a farm would carry) to the acre, and I have also learned that a pasture ought not to be stocked with half the number we meet with in agricultural papers. Especially is this true in dry seasons. Sheep bite so close that when a drought comes, it uses up a pasture much worse than when the same pasture is stocked with as many cattle as it ought to carry. I have about come to the conclusion that one sheep will eat, of grass, as much as two steers.

When it comes to marketing wool (and I am glad I can agree with "Wool-Grower" on one point) I have found a great drawback, not as he says, "in the manner of marketing," but in the market itself. I find that I am dependent on the mere chance that one or two buyers may come to my barn, or else on the honesty of some commission merchant to whom I may send it to sell for me. Even in the latter case, there are times when, for two or three months in succession, no buyer seeking wool enters his lofts. How is it with other crops? I can sell my wheat or my corn to a dozen buyers, right at home, *every day in the year*, or I can send it to any large market, and sell it to a thousand buyers, on every day in the year. I can sell my cattle—either stock cattle or fat cattle, and my hogs, twenty times, where I can sell my wool crop, or a flock of sheep, once. My cattle and my hogs are not turning into "culls," every two or three years, as are my sheep.

Your sheep stock is as fragile as china-ware and as perishable as strawberries. As to your wool market you are not much better off than those men who have bought high-priced Cashmere goats, the wool of which is said to be worth from eight to sixteen dollars per pound

—if one could only find the man who buys it. Some say it is worked by a factory in Edinburgh, some in Paris, but I have never found the man who could tell which.

I had been led to expect great things of the wool and woolen tariff passed last winter. I expected more from it for the reason that it went into effect immediately. We see now how much it affects the price of wool. Old sheep men tell me that I ought not to expect much from it this year, from the fact that the country was filled with woolens, previous to its passage. They say, hold on until next year and then you will see. I shall "hold on," because I have to, but I don't expect to see any benefit from the tariff, because I calculate there will be no tariff of that sort a year from now.

Next winter the free trade interest in Congress will say, "We passed this tariff last winter particularly to help the wool-grower; it has not benefited him the "first continental." Mr. McCulloch will say, just so, gentlemen, nor have I been able to get any revenue from wool or woolens.

Well, I have got sheep to sell, and so have nine-tenths of the sheep owners in Illinois. If we can sell out, or give out, or kill out, or let die out, of sheep, I suppose it will be all the better, in a year or two, for those happy wool growers who, it seems to me, keep sheep, not because they find them profitable, but because they are fascinated by, and in love with the stock.—*A. R. H., Shelby County, Ill., July*, 1867.

REMARKS.—The tariff was opposed mainly on the ground that it would prove burdensome to the consumer by raising the price of clothing, &c. We do not understand how its failure to verify these fears can add force to that argument in favor of its repeal.

TOPPING CORN.

While we have no doubt that the corn is injured by this practice, we do not hesitate to recommend it. We lose something in the weight of kernel, but gain in the fodder; and materially in managing the future harvest; it is worth while, perhaps, to go a little more particularly into the matter.

The leaves of plants perform two important functions: evaporation, which principally is effected by the lower surface, and by which the water that has been absorbed by the roots and absorbent vessels is carried off in part, leaving the residue in the form of concentrated juices;—and, second, respiration, by which carbonic acid is taken into the circulation of the plant and performs an important part in the conversion of the proper juices, and in preparing and maturing those elements which constitute the nutritious quality of the fruit. This process must of course cease when the parts which perform the office are destroyed. It would seem that such must be the effect produced by topping corn; and though the proper process may still go on by means of the few leaves that are left below the topping, yet it will be feeble and partial, the corn will ripen by evaporation merely; or rather, both the evaporation and the respiration will be diminished, to the consequent injury of the grain, which will have less of the nutritious property, and less weight; will be more liable to ferment, and to lose more in weight by the end of winter. By the process named, the proper secretions of the plant are in ripening rapidly converted into sugar; and so far as the topping checks the respiration, it would also diminish the saccharine quality and render the corn less agreeable to the taste, as well as less nutritious. But after having tried both ways, we incline to the opinion that the loss is less to top it, than to suffer the top to stand, and dry up and realize the inconvenience in harvesting.

AGRICULTURAL ITEMS.

—The regular apple-bark lice have been found upon pear trees in Illinois.

—Two correspondents of the *Boston Cultivator* say they have each milked twenty cows in an hour. One averages five minutes to each cow.

—Budding will be timely as soon as you can procure well formed buds, and the bark of the stock parts freely from the wood.

—The *Farmer's Advertiser* says that a grindstone will grind cast iron faster without water than when is is wet.

—The keeping of goats among cattle is recommended by Dr. G. M. Brown, of Cumberland, Va., as a prevention of infectious diseases.

—Farmers in Missouri contribute liberally for the establishment of manufactories in their neighborhoods.

—The State of North Carolina offers for sale all her public swamp lands, which consist of about one million and a half of acres.

—Mr. J. Farnum, Uxbridge, Mass., advises the New York Farmers' Club to apply air slacked lime to plants, when the dew is on, instead of plaster, &c., for striped bugs, rose bugs, &c.

—Col. Bainbridge who has an apple orchard in De Soto, and is one of the most extensive fruit growers in Missouri, after having been troubled much by borers has found an effectual remedy for both the apple and peach borer, which is, to make

a thick whitewash and apply to the body of the trees in June. This will keep off the miller, and is, besides, an excellent fertilizer.

—M. Comaille, of the Paris Academy of Science, tested for a year the laying capacity of three ducks and three hens, under the same conditions, with this result: hens, 257 eggs; ducks, 617 eggs.

—Treat your horse with that kindness which is characteristic in all the actions of a merciful man —no animal will appreciate it better or respond to it with more gratitude than the horse.

—In Utah the gulls are making a vigorous campaign against the grasshoppers. The Mormons say that they were once before saved from famine in the same way.

—Last year red squirrels, cut worms, and caterpillars were remarkably plenty in Maine, this year farmers are almost entirely exempt from their ravages.

—No man so well understands farming as he who has made poor land rich, and he will keep it rich. He is like one who has earned a thousand dollars.

—H. C. Farrar, of Richford, Vt., whose name is familiar to the readers of our reports of the cattle market, has sold nearly 300 cows this season to farmers in Vermont, aside from a large number of cattle which he has sent to market.

—The Maine *Farmer* announces the death of Mr. Horace McKinney, of Waldo county, an enterprising farmer, and a member of the Committee of the New England Agricultural Society on draft horses.

—A correspondent of the *Maine Farmer* says, "many a housewife may be glad to know, when she has a piece of fresh meat she wishes to keep a few days, that it can be successfully done by placing it in a dish and covering it with buttermilk. I have practiced the plan for years."

—A Milwaukee meat thief knocked in the head a fine five months old imported blooded bull calf, belonging to Wm. P. Lynde, and valued at $300, cut off the hindquarters with an axe, without skinning or otherwise dressing it, and was arrested by the police with his booty.

—A North Carolina paper says that that State ought to send $3,000,000 worth of blackberries to market. The county of Forsythe shipped $60,000 worth of the fruit last year. The blackberry grows wild in great abundance throughout the central and western parts of the State.

—In reply to a correspondent who asks, Can good wine be made from grapes grown at the North? the editor of the *American Journal of Horticulture* says, We very much doubt it. What are or have been called native wines are fixed-up stuff—grape juice and water sweetened, not wine.

—The *Utica Herald* mentions a cheese factory in Durhamville, N. Y., which is supplied with water by a wind mill, which operates to the entire satisfaction of the manager. For the purpose of avoiding all taint that might affect the cheese, no hogs are kept at this factory.

—The California *Farmer* says, that a little while since a lot of wheat was sent from California to France; it was then shipped to Liverpool, thence to New York, thence to Chicago, the Great Grand wheat Depot of the United States, and yet after all these long voyages and repeated shipments, with added costs, it paid a profit all round.

Mr. James A. Pollard, superintendent of the State Prison, at Windsor, Vt., has probably the largest hog in New England. It measures in the girt 6 feet, 4 inches. In height, 3 feet, 8½ inches. In length, 8 feet, two inches; age about sixteen months. The estimated weight is about 1000 lbs.

—An ox belonging to Mr. Daniel Tainter, of Worcester, died Saturday night. On investigating for the cause of its death, a piece of steel skirt hoop, about six inches in length, was found imbedded in the right side of the heart, and forming an abscess between the heart and the lung. The indigestible substance had been taken with its food.

—At an exhibition of meat recently held at Nancy, France, a butcher exposed a mare, twenty-seven months old, weighing 410 kilos., and a horse, thirteen years old, weighing 520 kilos.; these animal had been fattened for the table, and were covered with garlands. The members of the Acclimatization Society awarded the butcher a silver medal and fifty francs in money.

—A correspondent of the *Vermont Farmer* who recently visited the flock of Dr. H. B. Hathaway, of Milton, Vt., speaks of it as one of the best in the State, bred directly from the "pure Hammond stock." He recently sold a buck for $1500. Not satisfied with fine wool, the Dr. has laid out three trout ponds, believing fish to be cheaper and better than pork, and is now preparing a cranberry meadow.

—At a meeting of the Warsaw, (Ill.,) Hort. Society, it was stated that the birds which do most injury to fruit are the oriole, robin, thrush, catbird, jaybird and cedarbird, while blackbirds, blue birds, hempbirds, goldfinches, wrens and swallows do good. No conclusion was reached except that as birds generally destroy so many insects it was not thought safe to recommend their destruction. Perhaps the best remedy for their ravages is to have large supplies of fruit.

—Dr. Trimble stated before the New York Farmers' Club that since the introduction of the English sparrow, the canker worm in New Haven and in other places has disappeared; also that the worm has another enemy, a parasite, so small as only to be seen by the glass, that lays its minute eggs in the eggs of the canker worm. Others ascribed the decrease of the canker worm to the cold winds and rains of the past spring, which occurred after the eggs commenced hatching.

Ladies' Department.

TWO LITTLE PAIRS OF BOOTS.

BY MRS. H. S. PERRY.

Two little pairs of boots, to-night,
Before the fire are drying,
Two little pairs of tired feet
In a trundle-bed are lying;
The tracks they left upon the floor
Make me feel much like sighing.

Those little boots with copper toes!
They run the livelong day?
And oftentimes I almost wish
That they were miles away!
So tired I am to hear so oft
Their heavy tramp at play.

They walk about the new-plowed ground,
Where mud in plenty lies,
They roll it up in marbles round,
Then bake it into pies:
And then at night upon the floor
In every shape it dries.

To-day, I was disposed to scold;
But when I look, to-night,
At those little boots before the fire,
With copper toes so bright,
I think how sad my heart would be,
To put them out of sight.

For in a trunk, up stairs, I've laid
Two socks of white and blue;
If called to put those boots away,
O God, what should I do?
I mourn that there are not to-night,
Three pairs instead of two.

I mourn because I thought how nice
My neighbor 'cross the way,"
Could keep her carpets, all the year,
From getting worn and gray;
Yet well I know she'd smile to own
Some little boots to-day!

We mothers weary get and worn,
Over our load of care;
But how we speak of those little ones,
Let each of us beware;
For what would our firesides be to-night,
If no little boots were there.

HOUSEHOLD ECONOMY.

CONTRIBUTED FOR THE NEW ENGLAND FARMER.

MR. EDITOR:—I am a farmer's wife, and quite young. I, of course, take interest in anything appertaining to Household Economy. I have never seen these receipts in print.

Cookies.

Three eggs; two cups of sugar; one cup of butter; one-half cup sweet milk; one teaspoonful of soda, dissolved in the milk. Make them hard enough to roll.

Mount Pleasant Cake.

One cup butter; two cups sugar; one cup of eggs; one cup of cream, sweet or sour; one teaspoonful of soda, dissolved; four cups flour; one teaspoon cream-tartar. Bake in a moderate oven.

Cheap Cake.

One cup thick cream; one cup sugar; one egg; one teaspoon soda; spice to your taste; flour enough to make it rather thicker than griddle cakes.

Doughnuts.

Two cups new milk; half a cup sour cream; one cup sugar; one egg; one teaspoon soda.

Railroad Pudding.

One cup molasses; one cup sweet milk; one cup chopped pork; four cups flour; one teaspoon soda. Steam two hours. JOSEPHINE.

South Acworth, N. H., 1867.

REMARKS.—Brief and to the point. Our correspondent will understand that we appreciate her favor, although it has been delayed some time in appearing.

The Poor Man's Loaf.

When you boil your potatoes for dinner put in enough to make a pint when peeled and mashed As soon as they are boiled, peel and mash as fine as possible with a knife; set away till tea time, then add a pint of corn meal, rubbing it well together; then pour from the teakettle three pints of boiling water on the whole, stirring well with the spoon; let stand till cool, and then add a gill of fresh yeast and stir in flour till stiff enough to mould; continue to mould until the dough is perfectly smooth; let it set till morning, and then make out a pan of rolls for breakfast. Mould well the remainder, divide into equal parts for pans, which will make four nice loaves; as soon as the rolls are baked put the loaves into the stove and bake slowly until done. ECONOMY.

Concord, Mass., June, 1867.

Cucumber Catchup.

To three dozen good sized cucumbers add eight small onions, chop them fine; then add three-fourths of a pint fine salt; drain it twelve hours as cheese curd is drained, and then and one-half teacup best fine pepper, and one teacup unground native mustard. Stir it well, put it in a jar and cover with strong vinegar; then it is fit for use.

J. M. CASKIN.

North Chelmsford, April 1, 1867.

Imitation Cider.

I cannot vouch for its goodness, as I have never tried it.

Take four gallons soft water; four pounds best brown sugar; three ounces tartaric acid; one pint of good yeast. Have the water a little more than milk warm; put into a clean keg; add the other articles; let it stand in a warm place and work twenty-four hours; then bottle and it is fit for use.

Dudley, Mass., 1867. A FARMER'S WIFE.

REMARKS.—We say with our correspondent, "We cannot vouch for its goodness." As for ourselves, if we could not get the real juice of the apple we should give all imitations the cold shoulder. ED.

ABOUT TOMATOES.

Tomato Pudding.—Pour boiling water on tomatoes; remove the skins. Put in the bottom of the pudding-dish some bread-crumbs, then slice the tomatoes on them, season with sugar, butter, pepper and salt, add some more bread-crumbs, then the sliced tomatoes and seasoning; and if the tomato does not wet the bread-crumbs, add a little water. Then for a small pudding beat up two eggs and pour over the top. Bake about twenty minutes.

Tomato Catsup.—Take ripe tomatoes, and scald them just sufficient to allow you to take off the skin; then let them stand for a day, covered with salt; strain them thoroughly to remove the seeds; then to every two quarts add three ounces of cloves, two of black pepper, two nutmegs, and a very little Cayenne pepper, with a little salt; boil the liquor for half an hour, and then let it cool and settle; add a pint of the best cider vinegar, after which bottle it, corking and sealing it tightly. Keep it always in a cool place.

Another way.—Take one bushel of tomatoes, and boil them until they are soft; squeeze them through a fine wire sieve, and add half a gallon of vinegar, one pint and a half salt, two ounces of cloves, quarter of a pound of allspice, two ounces of Cayenne pepper, three teaspoonfuls of black pepper, five heads of garlic skinned and separated; mix together, and boil about three hours; or until reduced to about one-half; then bottle without straining.

Green Tomato Soy.—To one peck of green tomatoes, sliced thin, add one pint of salt; stand twenty-four hours; then strain and put them on the fire, with twelve raw onions, one ounce of black pepper, one ounce of allspice, quarter of a pound of ground mustard, half a pound of white mustard-seed, and a little Cayenne pepper. Cover with vinegar, and boil until as thick as jam, stirring constantly to prevent burning.

To Broil Tomatoes.—Wash and wipe the tomatoes, and put them on the gridiron over live coals, with the stem down. When that side is brown turn them and let them cook through. Put them on a hot dish and send them quickly to table, to be there seasoned to taste.

To Bake Tomatoes.—Season them with salt and pepper: flour them over, put them in a deep plate with a little butter, and bake in a stove.

Tomato Soup.—Wash, scrape, and cut small the red part of three large carrots, three heads of celery, four large onions, two large turnips; put them into a saucepan, with a teaspoonful of butter, half a pound of lean, new ham; let them stew very gently for an hour; then add three quarts of brown gravy soup and some whole black pepper, with eight or ten ripe tomatoes; let it boil an hour and a half, and pulp it through a sieve; serve it with fried bread cut in dice.

Another Way.—One quart of tomatoes after they are sliced, and three pints of water; boil one hour and a half. One tablespoonful of flour; boil a few minutes; butter the size of an egg and a coffee cup of milk. Just before you take it up, salt and pepper. The addition of a little barley is an improvement.

Tomato Wine.—Take small ripe tomatoes, pick off the stems, put them in a basket or tub, wash clean, then mash well and strain through a linen rag; (a bushel will make five gallons pure;) then add two and a half to three pounds of good brown sugar to each gallon, then put it into a cask, and let it ferment as for raspberry wine. If two gallons of water be added to each bushel of tomatoes the wine will be as good.

CANNING FRUIT.

Like many others, I tried, again, and again, to seal fruit cans so as to keep the fruit without moulding upon the top. I was particular in following the printed directions in general use, but found that my cans, when cold, would not be more than two-thirds full, and in a few days a white mould would appear upon the top. I finally applied to a friend who, I knew, canned large quantities for her own use. She showed me fruit over a year old, quite fresh, the cans full, and no mould. I at once adopted her plan, which I have since followed with great success. I have no interest in the manufacture of cans, and believe that every one should do his own advertising, but I prefer that kind in which you have only the can, glass cover and rubber to use. Fruit can be kept just as well without as with sugar; and those sealed up for pies are better without any, as they will retain their flavor far better. Brass kettles should never be used. Tin pans or kettles lined with porcelain, so as to preserve the most perfect flavor of the fruit, are the best. While my fruit is being scalded, I put a gill of cold water into each can, and fill up with hot water, putting the covers and rubber also into hot water. The fruit need not be cooked—only heated to the boiling point—unless in preparing pears or quinces, or some other hard fruits, that may require more cooking, and then only just so that a straw may be passed through, always being careful to have juice enough to cover the fruit. As soon as boiling hot, empty a can and fill; then another, or as many as can well be attended to. Let the cans stand open until you can comfortably bear the hands upon them. Meanwhile more fruit may be heated. Cut thick writing paper in round pieces the size of the top of each can, and when the contents of the cans are cooled, slip a piece over the top of the fruit in each can, and at once fill up on the top of the paper with boiling juice (saved for that purpose), and put on the covers as soon as

filled, according to the directions given. I often seal up cherries and tomatoes, only for winter use, in one-gallon stone jars that are small at the top, prepared just the same as for glass. Leave off the covers, seal with melted rosin, adding a little tallow. Try it on a piece of cloth; if too brittle, add more tallow and *vice versa*. Cut a paper also for the top of the jar, just so that it will come over the edge, and dip a piece of thick cloth into the rosin, only upon one side, spread over the jar and tie down; now with a spoon, dip and spread on the hot rosin, until entirely covered, pressing down the sides with the hands dipped in cold water. When cold, if the jar is air-tight, the cover will be depressed a quarter of an inch or more. But if it is level, then you must seal it over again. Those who can common sour cherries, will find them greatly improved by first drawing off all the juice, and then covering them with water—scald and drain off, and cover again for sealing, canning, preserving or drying.—*Farm and Fireside.*

How to Train Boys.—"E. H. Arr," in writing to the Springfield *Republican*, gives some sensible remarks in regard to training up a boy in the way he should go. She says:

"Hosts of selfish, thoughtless mothers shall send upon us another generation of listless, vapid sons, open to temptation. Years ago, a son of my own was the object of pleasant theories and plans. An unerring teacher took him hence; yet have I learned through him to look with loving eyes on other women's sons, and think what I would do for them. O mothers! hunt out the soft, tender, genial side of your boys natures. Make the most of any gentle taste or comely propensity. Encourage them to love flowers, pictures, and all the beautiful things which God has made. Talk with them, read to them, go out with them into the fields and woods, and hallow pleasant scenes with holy memories. A daily ministration to their unfurnished hungry minds, a daily touch to their unformed taste, shall make them more comely than costly garments. They will ever bear you witness in the character and conduct of your children; but your laces and embroideries will crumble to dust. Why don't mothers teach their children more, and dress them less?"

To Preserve Crab Apples.—Take off the stem and core them with a pen-knife, without cutting them open. Weigh a pound of white sugar for each pound of prepared fruit; put a teacup of water to each pound of sugar; put it over a moderate fire. When the sugar is all dissolved and hot, put the apples in; let them boil gently until they are clear, then skim them out and place them on flat dishes. Boil the syrup until it is thick; put the fruit in whatever it is to be kept, in and when the syrup is cooled and settled, pour it carefully over the fruit. Slices of lemon boiled with the fruit may be considered an improvement; one lemon is enough for several pounds of fruit. Crab apples may be preserved whole, with only half an inch of the stem on; three-quarters of a pound of sugar for each pound of fruit.

Cost of Cashmere Shawls.—The best Cashmere shawls, the long shawls with plain ground, crimson, purple, blue, green, or yellow—green are best—never cost less than £135 a pair, and are never sold singly. The next kind, or square shawls, much more frequently imported into Europe, are either loom-worked or needle-worked, needle-worked being the more original, and they cost from £30 to £50 in the Punjaub, without freight or interest or profit to the importer—little facts which we commend to the attention of women who think they can buy the best Cashmere at £15 or even £10 a shawl. What they do buy is either an imitation which never was in India at all, or a Delhi shawl, very good in its way, but no more approaching a Cashmere shawl in beauty than in durability. A man might lie on heather in a black Cashmere for twenty years, and it would be as perfect as on the first day, while every imitation whatsoever will die out.—*English Paper.*

THE
NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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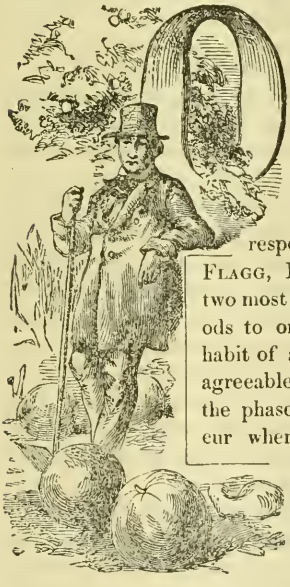
OCTOBER.

"On hill and field October's glories fade;
O'er hill and field the blackbirds southern fly;
The brown leaves rustle down the forest glade,
Where naked branches make a fitful shade,
And the last blooms of autumn withered lie."



One of our most beautiful writers, and one of the most critical observers of the ever changing aspects of Nature, our old correspondent, Wilson Flagg, Esq., says "the two most interesting periods to one who is in the habit of associating some agreeable sentiment with the phases of nature, occur when the trees are putting forth their tender leaves and flowers in the opening of the year, and when they are assuming the variegated hues that precede the fall of the leaf. Hence the spring and the autumn have always been regarded as pre-eminently the two poetical seasons,—the one emblemizing the period of youth, the other that of old age. But to the eye of the painter as well as the poet, do these two seasons offer the greatest attractions."

"In the spring, while the leaves are bursting from their hibernacles, and unfolding their plaited forms, they exhibit a great variety of tints, which are constantly changing with the progress of their development. In autumn, during a space of about two weeks, they pass through another succession of hues, and this change, connected with the fall of the leaf, has given rise to many pleasing sentiments, which have been woven into the poetry of all nations."

All persons do not enjoy the same seasons alike; we cannot tell why. It can hardly be peculiarity of temperament, for in many cases those persons who are prone to look upon the dark side of things, find their highest enjoyment in nature in "the melancholy days, the saddest of the year," of which Bryant sings. Some prefer the month of May, when Nature has burst away the shackles in which she has long been bound, and all the vegetable world is expanding into a new life. Some give June the preference, when the air is redolent with the perfume of flowers, while others prefer the fervid heats of July, when the early harvests crown the earth with their gladdening abundance.

The autumn, we must confess, does come to the soul with a melancholy touch. While we are silent in admiration of the prospects afforded by every valley and hill-top within our view, that admiration is tinged with a feeling of sadness which we did not summon, and which we cannot separate from the enjoyment

afforded by the charming scenery before us. It is the answering tones of Nature in our hearts. Before us is an expiring world; a world that only a few days ago was green and vigorous, and of exceeding beauty,—now perfected and going into decay, but like the last hours of the Christian, greatly illuminated by the perfections of its former life. So may it be with us all.

But it is folly for us to write, when we can find it so much better done by another and an unknown hand. Read and see how vividly he brings autumn scenes before you. The very things you have seen and done yourselves, and thought of a hundred times since,—and if shut up in the city, that you have gone back to see and live your youth over again among them. How life-like and beautiful is the following sketch:—

"We do not now, and never did believe that autumn days are 'the saddest of the year.' To us they seem the brightest and happiest of the twelvemonth. They come with their delightful coolness close after the sweltering summer, and they bring with them the treasure that the spring promised and the summer toiled to perfect. The countless wealth of the teeming earth comes home to the barns or hangs pendant on the boughs. The grapes turn purple and grow red in the face with the unpressed wine that fills their bursting skins. The nuts the boys and girls seek under the thick limbed beech, or beat from the walnut and oil nut trees, are waiting to be gathered. The cider mill has its teeth examined, and its tubs washed, and its press made ready for the cart loads of apples that are turned out at its door. So like an old epicure of an anaconda that wakes from months of sleep to glut itself on the rabbits that are near it! And the squirrels chirp and frisk so merrily, with their cheeks plethoric with nuts and stolen corn, as an honest Jack's with 'old soldiers.' What rare sport is to be had with the coons when the harvest or the hunter's moon plays at 'bo-peep' with the sun, raising their broad faces over the eastern horizon, just as the sun draws his below the western."

And the month of the huskings, now by results of the husking machine, fast becoming memories of the past or only to be found in rocky New England. And the large mellow pumpkins, that dot the corn-field all over with their rich color, and seem to be aching to be made into luscious pies for these same huskings, where rural maidens and their lovers pop the question and claim the forfeit kiss.

"And what an event is the lighting of the first fire in the sitting-room, particularly if it be of wood, and be in one of those smoky, roomy, uncomfortable, delightful old-fashioned fire-places. How the smoke runs into all the little crevices of the chimney, and then, frightened at itself, draws back and comes to the hearth again, timid and distrustful of the world outside. And so it coquets and flirts till the flames, getting bold and blustering, run up the chimney and encourage the smoke. And when it does at last get over the top, one little wavelet after another, it loiters for a minute, uncertain and irresolute, and then goes off in such volumes and rises up so buoyantly, and keeps up such a race with the flames all the long evening. Henceforth the fire absorbs all Tom's care and his mother's, and another is added to his 'chores,' viz: to bring in chips and wood. The Lares and Penates* take their seat upon the broad hearth-stone for the winter, the cricket chirps, and

'Like a locust shrills the imprisoned sap,
Hunted to death in galleries blind.'"

And how grand is what we call Nature. The gorgeous sunsets, the myriad-hued foliage, even the bare trunks and stripped branches of the forest are all alive with beauty. And to us it seems a gladsome beauty. There is nothing sombre in it. The trees put off their leaves as the soldier who has done his duty doffs his uniform when his work is done, and the victory gained. The trees have borne their fruit, they have withstood the spring freshet and the summer drought. Their duty was to grow, and they have done it. They can point to feet of new twigs, and inches of new circumference, and they lay off their garments for the rest of winter.

"And how the earth takes up their cast off garments, to make from them a garment for herself. Driven from the garden of summer, as Mother Eve was from the garden of Eden, old Mother Earth sows leaves together, and makes to herself an apron to cover her lap, and of such a web of many colors as no Isaac ever yet chose for his Joseph."

What a close observer the writer of the above must be. How he has treasured up the

*The household gods of the Romans.

scenes, sayings, and doings, and the sacred memories of home. Thanks to the Cincinnati *Gazette* for the pleasure we have found in reading him, and which we mean tens of thousands of others shall enjoy through these columns. Come and rusticate with us, friend, in the "Woods of Walden," on the banks of the "classic" Concord river, amid whispering hemlocks and gorgeous autumnal scenery.

OCTOBER WORK.

No month in the year affords more pleasant opportunities for out-door work than October. It is usually dry and cool, so that men and teams feel lusty and strong. The days are not so long as to exhaust either, and with all things in order, a great deal may be done towards permanent improvements on the farm, besides attending to the stock and the crops.

In the early part of the month it is an excellent time for draining, which is a work greatly needed on many farms. Needed, because there are acres of low, moist ground on them which produce but one ton of ordinary hay each year, worth, perhaps, ten dollars a ton, while, with proper drainage, ploughing, manuring a little and seeding, they would produce a ton and a half, and sometimes two tons per acre for ten years in succession, and worth from $10 to $16 per ton. Every second year such land ought to receive a top dressing of well rotted manure, in order to keep up the fertility which we have assumed. In most cases no money need be expended to reclaim such lands, excepting for grass seed, if the proprietor does not raise it himself. The reclamation of such lands will pay the farmer twice as much interest as the investment of his money will in railroad, bank, or most other stocks. The investment of their money in various kinds of stocks where the income is small, at most, and where dividends are withheld, and ruinous losses frequently ensue, instead of investing in the soil about their doors, is an error which a great many New England farmers fall into. If they would make an experiment upon one acre, keeping an accurate account of the cost of reclamation, and the value of its products for five years, they would find that the products of the land would give an income three or four times as large as that derived from most stocks. This income would be liable to few fluctuations, and would be absolutely secure from any great loss.

Next to the middle of June, October is the best time for pruning apple and other trees. They are then in a comparatively quiet state, and will not bleed when they are cut.

If the month proves a particularly dry one, every available moment should be occupied to accumulate materials to increase the manure heap throughout the winter. One of the best of all materials for this purpose is *peat*. Indeed, old, highly decomposed peat is an excellent manure in itself. In addition to this, it is one of the best absorbents in nature, and if added to the droppings of the stock once a week, will store up and preserve every pound of them for future use.

Cattle who are fattening for beef, and swine intended for slaughtering in December, will require especial attention while mild weather lasts. They will grow much faster on the same food, than when the weather is cold.

Much cost of fuel, vexation and discomfort may be avoided by careful attention to the buildings before blustering weather sets in. From the saddle boards to the underpinning, every part ought to be examined, and a shingle put in place, a clapboard nailed down, a pane of glasss set, or a door righted up wherever either are needed. If the house needs banking up, it may be done easier and better with hemlock or pine brush laid closely together against the bottom of the house. The first snow that falls will be likely to fill all the openings in the brush, and the frost will not penetrate half as quick as it would a mass of earth. When the brush is removed in the spring it may be burnt in the garden, where the ashes will afford a most valuable dressing.

October affords a good time to clear up under the walls—cut the bushes and tear up the roots, and if the loam has accumulated there, as it often does in the course of years, cart it out and spread on the grass lands. It will be as valuable as a light dressing of manure.

Many other things will call for the attention of the farmer during the month, which, if neglected, cannot be so well done at any other time. He must remember that thrift comes more frequently from systematic industry than from what is called "good luck."

—Proper care of our horses would obviate many painful diseases.

THE LANDOWNER.

When I come within sight of my farm, after having been away, a pleasant sensation rises within me, that no other feeling can equal. I am at home—on my own land. These are my acres, which the combined power of the country has guaranteed to me. It is mine, and my heirs forever. Here is security. If there is anything stable in the world, this is it. My fireside is therefore built upon a firm foundation. I and my children are safe. We are not intruded upon; no one has a right to do this; the strong arm of the law is ever ready to defend us. Here I have my worship undisturbed; I attend to my concerns unmolested. In a word, I am at home.

And when my acres wave with grain—that grain and those acres are mine. I own them, and I *feel* them. They are part of myself. My cattle—not the cattle of a thousand hills—are mine; *I* have raised them, and I know every one, as I know my household—"Boss," and "Brindle," and "Kitty." They come at my call—they know me. The old cow has a face as intelligent as many a person, and much more sympathy in it—honest old face! I could not well do without it.

Thus my fields are stocked with this intelligence, and the gleeful antics of the heifers and steers remind me of my own youthful days. And for "innocence" the lambs, and the quiet, inoffensive sheep. Even the "grunter" has something I do not want to dispense with. And the chickens, and the stately rooster who is lord of the barnyard, as I am of the premises.—*T. G. in Rural World.*

ALPHABETICAL INDEXES.

To the charge of a friend who recently accused us of a mania for alphabetical indexes, we must plead guilty. As editor we use books chiefly by way of reference, and the want of what the great Unabridged calls, "that which guides, points out, or informs; any table for facilitating reference to topics, names, and the like in a book, usually alphabetical in arrangement," has caused our madness. We may regret this derangement of a naturally serene and easily satisfied disposition, and try to forget the subject, but a glance at the choice volumes which fill the shelves of our desk, and from which we have so often

> —"Eaten of the insane root
> That takes the reason prisoner,"

and at once the worst symptoms of our monomania return.

Side by side on our shelves stand two volumes, wonderfully alike in many respects: "*Dairy Cows and Dairy Farming—Flint,*" and "*Cattle and their Diseases—Jennings.*" The first has a full alphabetical index, in some cases citing a dozen pages on which information upon a particular topic can be found. The other volume has a mere table of contents.

There, too, are the "*Practical Shepherd—Randall,*" and the "*American Shepherd—Morrill;*" volumes similar in size and style. The first has an alphabetical index which the wayfaring reader, though in a terrible hurry, can use with perfect satisfaction; the latter has a bulky table of contents which only serves to make confusion worse confounded.

Between the degree of perfection which marks the indexes of these volumes, and the degree of popularity which they have secured, there is, to say the least, a striking correspondence.

During his residence in New England, Dr. G. H. Dadd wrote books enough to make a man rich, but they were generally sent out with poor indexes. We are not well informed as to the degree of his success, but our impression is that for every dime he put in his purse from their sales he ought to have had a round dollar. Here, for instance, is his *American Reformed Cattle Doctor*, published in 1851, "containing"—so reads the title page—

> The Necessary Information
> for
> Preserving the Health and curing the Diseases
> of
> Oxen, Cows, Sheep, and Swine,
> with
> A great Variety of Original Recipes,
> and
> Valuable Information in reference to
> Farm and Dairy Management;
> whereby
> Every Man can be his own Cattle Doctor.

And yet, notwithstanding that we are put to our wit's and memory's end almost every week for suitable replies to the inquiries of the readers of the Farmer, for advice as to the proper treatment of the various ills by which their stock is from time to time afflicted, we so seldom refer to this volume that you can now write the word "Index," or your own name, in the dust which has settled undisturbed upon the head of the very pages on which all "the necessary information whereby every man can be his own cattle doctor" is spread out in detail. Though the volume has stood for years within a foot or so of the spectacles which dignify our anxious countenance, we are still unable to unloose the seals of that book. True, there are six pages of "contents;" but they are just about as useful for the purposes of an index, as six piles of brush would be to a

surveyor in the woods for the purposes of a compass.

We remember the remark of some essayist on longevity, that, however diverse, in most respects, may have been the habits of life of those individuals who have lived to a remarkably old age, a marked uniformity is observed in the fact that all have been early risers. Our own observation of the sale and use of books of the kind under consideration, justifies the conclusion, that however various may be their excellences in other respects, the few popular and profitable ones uniformly have a good alphabetical index.

With the remark of Daniel Webster, who once said, "I never look at a book that has no index," we close this apology for our unsoundness of mind on this subject.

While we do not offer the foregoing as a defence of unjust criticism, we do hope it will be received in extenuation of the apparent severity of a late notice of a most valuable treatise on the cultivation of an important crop, in which prominence was given to the remark that the work was sent out without any index at all. After according in the most gentlemanly manner "the utmost freedom to the critic," and admitting that, notwithstanding the careful manner in which the topics of this book were arranged, an "index might have been an improvement," the author of the work alluded to says, in a private note,—from which we venture to extract:

"I don't know as I have a right to make any complaint in the premises, but it is not pleasant to find one's well meaning neighbors infer from such a criticism, that one's book is a failure."

That certainly is an impression which we are sorry to learn our remark produced. We designed simply to remind author and publisher that this fast-reading age demands something to facilitate reference to the topics, facts, &c., which their books contain. If an ingenious watch-maker were reminded that he had omitted to furnish a key with his time-keeper, should that be taken as an intimation that the watch was a failure?

"But," continues our friend, "all this is the publisher's own matter." Now, were the publisher to write up his objection to our criticism, would he not most likely repeat the same remark, with the change of a single word, and say, "But all this is the author's own matter."

Whose business is it to make up the index? This question discloses the root and origin of the whole difficulty. We see that it is not the author's business. The printer, the binder, the publisher, severally beg to be excused. There is work in it; tiresome, bothering work,—work that to be hated needs but to be tried. Everybody wants an index; everybody admits its importance; but as it belongs to nobody to make it, the volume that embodies the experience of a life time, though written with care and skill, though printed "with accuracy and despatch," and bound in the finest style of art, disappoints the expectations of all engaged in its production. It don't sell. It is not quoted. It is a sealed book.

Whose business, then, we repeat, is it to make indexes, and thus to prevent the further ravings of the editors of the NEW ENGLAND FARMER?

For the New England Farmer.

JERSEY COWS.

Your article in the last number of the FARMER on Jersey cattle, although not giving a pronounced opinion, yet if we are to infer that you endorse the statement of Mr. Flint, I think the best farmers of Plymouth county will take issue with you. So far as regards this section of New England, I believe the converse to be the truth: that the Jersey cattle are very well adapted to the wants of Plymouth county farmers, and particularly to the wants of mechanics and small farmers who reside in villages, or whose limited amount of land prevents their keeping more than one or two cows. The opinion that they are not as hardy as natives, I do not think is borne out by facts.

It is now about fifteen years since the introduction of the Jerseys in this county. There was at that time, among the farmers a widespread prejudice against pure blood. How that has faded out, you may judge by the fact that at present there are from four to five hundred pure blood Jerseys in this county, with some thousand grades. One purpose of a farmer is to raise calves. Does it cost any more to raise a Jersey than a native? Some of our farmers are sure that the Jerseys look the best on the same keeping. A native yearling is worth from $20 to $30; with a *little Jersey blood* in them, the price runs up to $40 and $50, and a pure blood is worth $75 to $125. It needs no argument to prove the fact that blooded stock is the most profitable to raise. I am almost daily advised by farmers that have not owned pure blood, that their half Jersey cows are the most valuable they ever owned, a fact the purchaser would find out were he to ask the price. Eastern Massachusetts is largely indebted to Mr. Davis of Plymouth, Noyes, Field & Thompson of North Bridge-

water, Stetson, Bryant & Hobart of Bridgewater, for their early, persistent and continued efforts to introduce the Jersey cattle. New England climate has a peculiar and remarkable effect on the imported stock; their progeny showing a marked improvement in form; losing that harsh angular formation which characterize the Jersey, and rounding out in lines pleasing to the lover of good stock.

L. W. Puffer.

North Bridgewater, Mass., Aug. 15, 1865.

For the New England Farmer.

CHEMICAL TERMS.---No. II.

Base or Bases.—By these terms is meant such substances as will combine chemically with acids, and form salts. Thus in common salt,—which is a chloride of soda, or soda chemically combined with chlorine,—the soda is the base. In sulphate of lime or gypsum, the lime is the base. In sulphate of iron, oxide of iron is united with sulphuric acid. In this instance the oxide of iron is the base. A base may be an alkali or an oxide of a metal.

Reduction.—When the elements of a chemical compound are separated from each other, and restored to the condition in which they existed before their union, they are said to be reduced. This may be effected by the force of chemical affinity, by heat, and by galvanism. Thus, if to a solution of sulphate of iron, ammonia be added, the oxide of iron will separate from the sulphuric acid, and fall to the bottom, and the acid will combine with the ammonia for which it has a stronger affinity than it has for the oxide of iron. In this case the iron is said to be reduced. Heat a small quantity of red oxide of mercury in a tube over a lamp, and the oxygen will be driven off, and may be collected in a receiver, and the mercury will be found attached to the upper part of the tube, in the form of metallic coating, and may be collected into a globule. The mercury is said to be reduced.

Neutralization.—When sulphuric acid and lime are brought together, a new substance, plaster, or gypsum, is formed, which is neither alkaline nor acid. The alkali and acid just balance each other, and neither of these properties is any longer apparent. They are both neutralized. They are not absolutely destroyed, for the plaster or sulphate of lime may be reduced, when the lime and acid will exhibit the same properties which they did before they were united.

Filtration—is the straining of a liquid through porous paper, as blotting paper. This consists of the fibres of linen or cotton matted together. Writing paper will not do, because its pores are filled with glue or starch. This process is employed to separate from a solution all undissolved particles and impurities, and leave the solution clear and transparent.

Combustion.—By combustion is understood the union of combustible bodies with oxygen, and the process may be regarded as one of oxidation. The process may be rapid or slow, complete or incomplete. When the process is incomplete, particles of uncombined carbon are removed by the current of heated air, and form soot and lampblack. The products of combustion are chiefly in the form of gas. When coal and wood are burned, water in the form of vapor, carbonic acid, carbonic oxide, &c., are formed. When sulphur and phosphorus are burned, sulphurous acid and phosphorous acid are the result. Ashes are the incombustible portions found in bodies exposed to combustion.

Capillary Attraction.—If a piece of charcoal is dipped into cold water, it will drink up more than its weight of water. The charcoal is porous or spongy—that is, the solid matter is divided by hundreds of spaces or minute tubes. Could these spaces or tubes be laid open and laid side by side, they would cover a surface perhaps a thousand times larger than the piece of charcoal can cover. When a smooth surface, as of glass or wood is dipped into water, a certain portion of the water will adhere, showing that they have an attraction for each other. In the case of the charcoal or other porous body, the immense surface requires a large amount of fluid to moisten it. If a glass tube with a fine bore be dipped into water, the water will rise in it above the surface of the water into which it is dipped. It will rise in proportion to the fineness of the bore. Capillus means hair, and any fine tubes are called capillary tubes. The sides of small tubes are supposed to aid each other in drawing up liquids into the tubes. It is this power of attraction that causes oil to rise in a lamp wick, and water to spread in paper, sugar, sand, &c.—which causes salt to be diffused through a piece of meat. By means of this power, aided perhaps by vital force, the rootlets and sap vessels of plants attract water and various solutions from the soil, and convey them through the trunk and branches to the leaves.

In my next I shall give definitions of various chemical substances. R.

Concord, Mass.. Sept. 5, 1867.

For the New England Farmer.

PROCESS OF WINTER BUTTER-MAKING.

Sometime in the month of January, 1866, I sent you a communication signed "Ruby," promising to write again, on making winter butter. But a multitude of cares and a change in our business relations, have prevented me from fulfilling that promise, until the present opportunity, which I embrace with pleasure. Since then my husband has sold out his farm in Paxton, and purchased a small place in Worcester, consisting of a house, barn, and one acre of land. The dairy — except the old

brindle cow, the favorite of the herd—that I have taken so much pride in tending, the cheese tub, the churn, and all things pertaining to the farm, have been sold under the hammer of the auctioneer. Being a farmer's daughter, and for twenty years having the cares and responsibilities of a farmer's wife, this change seems like stepping aside from the regular course of our lives. But I hope it is for the best. The sample of butter I send you is from the last churning and production of Madam Brindle, and the final winding up of my dairying career.

My process for winter butter-making, is as follows: As soon as the milk is brought into the house, it is immediately strained into clean pans and set away for twelve hours, after which it is set over a kettle of boiling water, and warmed to about blood heat, when it is again set away, and allowed to stand from twenty-four to thirty-six hours before skimming. This is done to hasten the process of churning, and to render the butter solid and compact, like that made in the earlier parts of the season. After the cream is taken from the milk it is kept secure from frost, as I think freezing is injurious. As daily additions are made to the cream pail, care is taken to keep the whole well stirred. My time in keeping cream is from seven to nine days, and it should not be kept much longer. I allow cream to stand twenty-four hours after the last gathering is stirred in before churning. In preparing the cream for the churn, I warm it to the temperature of fifty-six degrees—preferring this temperature to a higher or a lower one—the churn is made ready by putting in hot water succeeded by cold. I then press the juice from the gratings of four common sized carrots, also warmed to fifty-six degrees. This is a quantity sufficient for a churning of eight or ten pounds. Mix the carrot and the cream together, and put it into the churn. The time usually spent in churning during the winter is from ten to thirty minutes. The carrot I use is the Early Horn. I think this kind excels any I have ever used for butter; being deep colored, juicy and sweet. When the butter is churned, it is taken out and worked thoroughly before salting; then weighed, and one and one-fourth ounces of salt added to the pound. This quantity is sufficient, without any farther salting. It is then set away until the next morning, when it is reworked, and about one tablespoonful of nice white sugar added to every five pounds of butter; then formed into small lumps for the table, and it is done. By this process the sample I send you was made, which I forward by express. RUBY.

Paxton, Mass., March 9, 1867.

REMARKS.—The sample of the last churning of the cream from the milk of Madame Brindle was duly received, but as the above date indicates, it was not until after the time for winter butter-making had passed. As our pigeon-holes were then well filled with the favors of our practical correspondents, on subjects relating to the work of the opening season, we concluded to delay the publication of this communication, till Jack Frost should open the hearts of our readers to receive Mrs. Ruby's directions for making lumps of butter in the winter season, almost as yellow and solid as that put down in June.

We appreciate the feelings of this farmer's daughter and farmer's wife as the hammer of that auctioneer fell on old Brindle, the utensils, and the home with which she had been so long familiar, and as she herself stepped aside from the regular course of her life. Most sincerely do we join in the hope that "it is all for the best." May the attractions of the new home prove an ample compensation for the loss of that enjoyment which resulted from "the cares and responsibilities" of the old!

We shall be glad to be informed of our correspondent's success in carrying out the plans, to which she alluded in a private note, for gardening and fruit raising on the grounds of her new residence.

APPLE CROP.—We make a few extracts from our exchanges in respect to this important crop. Chautauqua county, N. Y.,—"Apple crop a fair one." Buchanan county, Mich.,—"Fruit appears to be plenty, especially apples and pears." Hudson, Mich.,—"The apple crop will hardly be an average one." Wilmington, Vt.,—"Apple crop will be light." Hampton Falls, N. H.,—"Apples scarce." Readington, N. J.,—"Fruit crop one half as large as usual." Waynesville, N. C.,—"Apple crop very fine—rotting on the ground for want of consumers." Keene, N. H.,—"Though not an apple year, there will be a moderate abundance." Cedar Co., Iowa,—"Our crop of apples and plums is quite light, although the blossom was the largest ever known in this region." Polk county, Iowa,—"Orchards that are large enough, are loaded with fruit." Champaign county, Ill., —"The apple crop will be unusually light." Cecil county, Md.,—"Apples will be a light crop."

—By burning a small quantity of sulphur in and near places infested by ants, it is said they may be driven off.

THE BARTLETT PEAR.

Notwithstanding the great variety of new fruits which have been introduced of late, and highly extolled for their superior excellence, the Baldwin Apple, Hovey's Strawberry, and the Bartlett Pear are still favorites in the Boston market. The Bartlett pear, as it succeeds well when dwarfed by being grafted on quince, and thus comes into bearing much sooner than when grown as a standard, is a very desirable fruit. Taking into consideration its rapidity of growth, hardiness, size, form, flavor, and market value, the continued popularity of the Bartlett pear is not at all surprising. Mr. Downing says this fruit originated in Berkshire, England, about 1770, and was there known as the Williams. It was imported into this country in 1799 by Enoch Bartlett, Esq., of Dorchester, Mass., from whom it received its American name. Mr. Cole says it is liable to be affected by hard winters, and that more hardy native kinds are better adapted to the northern part of New England.

Fruit of large size, irregularly pyramidal. Skin very thin and smooth, clear yellow, (with a soft blush on the sunny side, in exposed specimens,) rarely marked with a faint russet. Stalk one to one and a half inches long, stout, inserted in a shallow, flat cavity. Calyx open, set in a very shallow, obscurely plaited basin. Flesh white, and exceedingly fine-grained and buttery; it is full of juice, sweet, with a highly perfumed, vinous flavor. (In damp or unfavorable soils, it is sometimes slightly acid.) Ripens from the last of August to the middle and last of September.

SPECIAL MANURES.

COMMON acceptance seems to have attached to the term *special* manure, the idea or meaning of something used as a fertilizer, or as a stimulant, that is not accumulated through the ordinary resources of the farm,—that is from the fodder and the stock.

It is a common practice to use considerable manure in the months of August and September, in stocking down lands to grass, and in various other ways,—and in speaking of special manures now, and as we purpose occasionally to do, it will be with the intention of stating *what they are* and *how they are generally used*, rather than to recommend them, preferring to leave that matter to the cultivator himself. It ought to be stated, however, that we firmly believe two things,—

1. That every farmer ought to exhaust all his resources for making manure at home, with his own means, and,

2. When this has been done he can profitably use genuine *special* manures under very many circumstances.

It is only within a comparatively short period that any considerable use has been made of the special articles that are now quite commonly employed as manures. Some of the old Roman writers frequently spoke of the value of *ashes* and *lime*, but seem not to have had the remotest idea of many of the substances which have been brought to act an important part in husbandry, and which do actually increase the value of many of our crops to a considerable extent.

One after another, these special agents have been discovered and introduced, and by some are thought indispensable agents in high farming. That some of them are of great value, giving not only a present but a permanent power of increase to the soil, there can be no doubt. Such, among others, is the use of bones. This fact was long ago learned by the farmers of England, who increased their wheat crop, by the agency of bones and thorough drainage, from the low standard of fifteen bushels per acre up to forty, with an average of about thirty. So great was the demand for them, that they soon became an important article of commerce, and British ships navigated every sea, and visited the remotest lands, to secure cargoes of bones. Our own shores were stripped of thousands of tons that went to fertilize the British Isles, while they impoverished as many of our own acres that were starving for them. They not only visited the hunting grounds of Africa, but gathered up the bones of countless herds of cattle on the Pampas of South America, that had been killed for their tallow, hides and horns alone! Even battle-fields, where men and brutes found a common grave, were carefully gleaned, and the decaying relics of unnumbered soldiers, or of horse and rider, found a too early resurrection and were exchanged for British gold! All these were transferred to the soil, and, with an improved husbandry in other respects, gave it a productive power which it had never had before. And it was not a spasmodic power, but a permanent and reliable one, that has brought the most luxuriant crops for more than half a century. The example of our trans-Atlantic friends at length awakened our own people to a sense of the importance of bones as food for plants, and some of them have been gathered and converted into superphosphate, bone meal and bone-flour, to be used both as a fertilizer and to be mingled with the food of our domestic animals.

The testimony of chemists is well expressed by Mr. Hocher, in his work entitled "*Science for the School and Family*," that "the powder of bones is an exceedingly valuable manure, as one can readily see it would be from observing the composition of bone. A bone is composed of an animal part, gelatine; and a mineral part, nine-tenths of which is phosphate of lime, and one-tenth the carbonate. The gelatine is of great value as a fertilizer for any crop, because of the nitrogen which it contains; and the phosphate of lime is especially favorable to the development of seeds; and therefore bone-dust is particularly appropriate as a manure for grain-fields. It is on account of this phosphate of lime that bone-dust is so beneficial to dairy land. Milk and cheese both contain this substance. There is about half a pound of it in ten gallons of milk. Bone-dust is also an excellent manure for wheat, for though this be a silica plant, that is, a plant in whose ashes sand, or silicate of lime abounds, the presence of phosphate in the soil is essential to the formation of the seeds. If the soil be rich in silicates but deficient in phosphates,

excellent straw will be obtained, but the grain will be small in amount; it will be a crop better calculated to make bonnets than bread. It is calculated that one hundred pounds of bone-dust are equal to twenty-five or thirty hundred pounds of stable-manure. Although bones contain such fertilizing materials, they must be well pulverized in order that they may be immediately available for the nutrition of of plants. It takes often even twenty or more years for the soil to disintegrate fragments of bone of the size of a hazel-nut or a pea, and yet such fragments are frequently seen in the bone-dust of commerce." Happily, means have been discovered to reduce them to paste or flour, of which we shall speak hereafter.

As *auxiliaries* or *helps*, in the management of soils, we have said that genuine special manures may be in some cases profitably used. No exact rules, however, can be prescribed for their employment. The nature of the soil, its texture, or mechanical condition, the degree of moisture it has, the state of the season and the time of application, all have so much to do with them, that exact rules would often prove inapplicable if they were given. The farmer will remember that plants feed only upon matter in solution,—that is, the bone, plaster, potash or ashes, must be dissolved, and in the form of liquid, before the roots can avail themselves of its nutriment. If, therefore, any of the special manures are applied to a soil so lacking in moisture as not to render them soluble, they remain inactive in the soil, and the plant derives no benefit from them. So if a soil—for the want of drainage—is constantly charged with cold water, which keeps the temperature so low that putrefaction cannot take place, plants derive but little benefit from manure of any kind, even if a redundance of it were applied.

These simple statements will illustrate, perhaps, why so many experiments with special manures are set down as failures. They are used under such circumstances as to render them completely inoperative.

When these are applied, therefore, they should be upon soils that are porous and fine, so that atmospheric action will be free among the particles, warming and moistening them. Under these circumstances, the fine grains, or flour, of bone, guano, superphosphate, or any of the special manures, soon become softened by the dampness of the soil, then warmed by the genial rays of the sun,—which easily penetrate it because it is light and fine,—and its nutritive powers, by the process of fermentation and putrefaction, are soon converted into a soluble form, all ready to be appropriated by the roots of the plants.

Treated in this way, special manures are quick in their action, giving plants an early and vigorous start, and pushing them rapidly forward, until their roots find new means of support in the soil which they penetrate in all directions. In rows of corn or vegetables where they are applied, the foliage will be found more luxuriant and of a richer and deeper color than in rows where none had been placed. These conditions must be observed, or they will frequently prove a failure. They should, also, be near the surface, where they will be kept moist by the dampness of the atmosphere and summer showers. Even when these conditions are observed, it will be well to apply them to the soil just before a fall of rain, in misty weather, or during a gentle shower.

LIME AND SALT FOR CURING HAY.

We take great pleasure in presenting the following answer to the inquiry of Mr. Metcalf in respect to the views of chemists as to the supposed action of salt and lime in counteracting the natural tendency of imperfectly cured hay to heat and spoil in the mow. Although Dr. Nichols does not assign a philosophical reason for the curative properties of the mixture which is ascribed to it by Mr. Metcalf, the readers of the Farmer will thank him for his prompt response.

150 Congress Street,
Boston, Aug. 16, 1867.

Mr. S. Fletcher,—*Dear Sir*:—I have just read in the Farmer, your letter to Mr. Brown regarding Mr. Metcalf's method of curing hay by the employment of *lime* and *salt*. I was so very busy when you called at our counting room, I failed to learn the true import or nature of your inquiries. It is evident considerable interest will be awakened in this subject, and therefore I hasten to present to your readers, a *chemical view* of the matter, which I trust is reliable.

If the quantities of salt and quick lime mentioned by Mr. Metcalf were mixed together, and sprinkled with water, double decomposition would result, and *caustic soda* and *chloride* of

calcium would be formed. A mutual destruction takes place between the lime and salt, and birth is given to these new bodies. Caustic soda would be very hurtful to animals, even if afforded in small quantities. It is a powerful caustic irritant. Chloride of Calcium is a deliquescent salt used in the arts, and in medicine. This also, would undoubtedly be harmful to animals. If no further chemical changes resulted, Mr. Metcalf's lime and salt mixture upon hay, would certainly prove an unhappy discovery. But the two new bodies tend strongly towards further changes; the caustic soda has a powerful appetite for carbonic acid, which it finds in the air diffused through the hay; a union is formed, and *carbonate of soda* results. But this is not all. Carbonate of soda and chloride of calcium cannot remain separate,—they rush together, exchange ingredients, and lo! we get back to *salt* again, *common salt* and hard, insoluble *carbonate of lime* remain in Mr. Metcalf's hay-mow after the play of chemical affinities is fairly over.

It is presumed that lime and salt mixed and strewn upon moist hay, would be influenced chemically, in a way similar to that which takes place when they are mixed and sprinkled with water. It is possible, a body of hay being porous, *unequal diffusion* of the carbonate of soda and chloride of calcium occurs from a point where they are formed, so that they do not unite. In this case carbonate of soda and chloride of calcium remains in the hay instead of salt and carbonate of lime. It is not probable, however, that decomposition stops short of the ultimate results, *salt* and *chalk*.

With this view, no advantages result from mixing lime with salt in curing hay, as the production of chalk (carbonate of lime) in connection with the salt, affords no additional preservative agent. All the gases involved in the changes are used in the new bodies formed, so that no agent of this nature is set free, to act as an antiseptic or destroyer of ferment. Hay treated in this way would be harmless to animals, as salt and chalk are perfectly innocous. Very truly yours,

JAS. R. NICHOLS.

—O. Aylworth, Fabius, N. Y., wrote to the New York Farmers' Club that a teaspoonful of turpentine placed in a barrel of water will kill the wigglers which hatch into mosquitoes.

SUMMER.

Dancing along the lands
Green-gown'd Summer has come, her robe spread out in her hands;
And to see her the morn wakes soon, and the evening is loth to go,
While the stars crowd thick in the sky to watch her in sleep below.

To prepare for her coming, the Sun
Work'd with a burning touch, and to-day all his work is done—
The fields with their flowers are dress'd, the grasses are long and soft;
The birds have their song in the bushes, the bees their drone in the croft.

You meet her in earliest dawn
Breathing most fragrant breath by the side of the blossoming thorn;
Laughing along by the streams, or pausing in valleys still,
Or painting with tender tints the bare brown rocks on the hill.

Oft in the noontide heat
She turns to the antique woods where the dew lies fresh for her feet;
Where the green lights fall through the leaves on couches of mounded moss,
And the sway of a wind-swung bough throws shadow and sunshine across.

Then at the end of the day,
Out of the edge of the sea where the waves plash cool in the bay;
And a pathway of gold is traced from the Palace of Sunset's door
Far over the heaving tide to the smooth wet sand on the shore.

Quickly wherever she goes
Comes a warmer waft to the wind and a richer red to the rose;
On the wave a bluer surge, in the orchard a whiter bloom,
A brightening light for the sky and greener grass for the tomb.

Ever in full-flush'd health,
Gifts unstinted she flings forth from her broad bosom'd wealth—
Good for the sons of men; whilst Heaven, with vaults serene,
Loops up its curtain of cloud and smiles on the smiling scene.

Oh, for the summer heart!
Large and tranquil and glad, forever bearing its part
In a whirling, wilder'd world, whose groanings shall some day cease,
And a King shall rule over all in a Kingdom of Love and Peace.

—*Alfred Norris, in "Good Words" for August.*

For the New England Farmer.

NEWSPAPER ARTICLES---IMPROVEMENT OF STOCK.

It is a long time since I have written to an editor, and feel that I may be intruding now, but I have been a constant reader of the FARMER for a long time, and am very much interested in the articles of your valuable paper; more so, perhaps, because I am acquainted with very many of your contributors, and have had the pleasure of looking over the farms and stock of others. I sometimes wish that those who write would strive rather to present things as they are, than to produce articles that sound well. I remember of travelling several miles out of my way, some years ago, to see the farm of one that used frequently to furnish articles for a Boston agricultural paper, ex-

pecting to find a perfect pattern of neatness and order. But the first thing that met my eye was an old wall in front of the house nearly covered with wild brush, briers, weeds and everything that looked repulsive to the sight. This was about a fair specimen of his farm, with the exception of a very few acres. He wrote a statement in regard to a cow he had; giving the number of persons in the family provided with butter and milk, the number of pounds of butter sold per week, besides selling two quarts per day—making an extraordinary production for one cow,—when the facts of the case were, that the family never used any butter, and the milk sold was skim milk! Consequently those who were acquainted with the facts, had no confidence in his articles, and many condemned all newspaper articles as being of the same class. But there are many worthy exceptions. There are those who give us facts, and facts alone.

Few, however, like to make a record of the failure of any experiment, whether in field crops or stock raising, although these are often far more instructive than successes which farmers are so willing to detail. It is not enough to know what to do. What not to do, should also be understood; and to be understood, it should be taught by precept and example. How many promising colts, calves and lambs have been injured by improper feeding, or by injudicious management. And yet those who have learned wisdom in this dear school, are very reluctant to make a clean confession. I could cite instances and call names in illustration of these remarks, if proper to do so.

Still there is evident progress in agriculture, especially in the improvement of stock. Having had the pleasure of seeing with my own eyes many of the finest herds of horses, cattle and sheep, both in New England and the Provinces, I am certain there has been a very great change for the better, during the last twenty years, in stock and stock raising. This must be apparent to all who have been in the habit of attending our agricultural Fairs during that period. Should any one object to the evidence afforded of such improvement by the exhibitions at these Fairs, let them, as they may have opportunity, call on Mr. Chenery, of Belmont, Mr. H. G. White, of South Framingham, Mr. Lincoln, of Worcester, or on any careful modern breeder in the vicinity of Barre, Mass.; on Peter Jones of Amherst, N. H., or on Dr. Henry Boynton, of Woodstock, Vt., and on hundreds of others in various parts of New England, all of whom will take pleasure in showing their fine horses, cattle, sheep, hogs, &c., and then say, if he will, that there has been no improvement, no change for the better. **

Mason, N. H., Aug., 1867.

Remarks.—If our correspondent's doubting friend should object to those breeders, as well as to cattle shows, as interested witnesses of stock improvement, let him attend that disinterested umpire, the Brighton market, some week when the best farmers in Maine send up their perfectly matched working oxen, or their mammoth fat bullocks, or when the Meeches, and other farmers, of the Champlain valley send their Durham steers, which, as to form and quality, rival the stock of Kentucky and Illinois, and do this in company with some one who remembers the quality of stock which came from these sections twenty years ago.

For the New England Farmer.

FARMING IN WEST VIRGINIA.

Messrs. Editors:—You requested me to give you the mode of farming and rotation of crops in my neighborhood, which I will do, as near as I can, to do justice to all parties. Cattle and corn are the principal articles raised.

Cattle.—It does not cost much to raise cattle up to three years old, as they are turned out into the ridges to graze in the summer, and are not brought up until late in the fall. They are wintered upon rough feed. When three years old they are sold to the speculators.

Corn.—The farmers (or those who call themselves such) plow their ground in the spring, most of them shallow, and harrow its lightly; then they take a shovel-plow and lay it off, from three and a half to four feet each way, and from three to four inches deep, and plant in those crosses. After the corn comes up big enough to plow, they take a shovel-plow, run it as close to the corn as they can without covering much of it, with some boys or girls, or both, if they have them, to follow the plow, to uncover what happens to get covered up, to chop out what briers the shovel-plow does not cut up. Next, in about ten days, they cross it in the same manner. The third and last time time they generally plow the same way as they did the first time, but put three furrows between the rows of corn; too often leaving their shovel-plows, and the big plow, too, where they finished, until wanted for the next crop. When the corn is ripe enough to harvest, they cut it up into shocks of sixteen hills square. Most of the farmers let it stand in the shocks until winter, before they husk it. The corn generally averages from twenty to thirty bushels per acre; that is, without any plaster or manure of any kind. There is no system of rotation of crops here. Often a piece of ground is farmed in corn for two or three crops in succession, before they sow it into wheat.

Wheat.—Soon after cutting the corn, wheat is sown. Many take a shovel-plow and at once plow in the wheat; others break up the land with a big plow, after they cut up their corn, then sow their wheat, and take a shovel-plow and plow it in. They generally get from five

to ten bushels per acre. But where they break up sod-ground and let it lay until the sod has become thoroughly rotted, and sow by the tenth to the fifteenth of September, they get from twenty to thirty bushels per acre of the first quality of wheat. But where they sow after corn it is generally of the second or third quality. What wheat is raised in this valley is raised after corn.

Oats.—Some oats are raised here. This crop is generally raised on corn stubble. Most sow their oats and plow them in with a shovel-plow.

Buckwheat.—This is put on sod, which is broken up with a big plow, sowed, and harrowed in.

Grass.—There is some grass cut here, but it is generally allowed to stand until the heads have turned brown, and often until it is dead ripe. It will average about a ton per acre. The farmers depend more upon their corn-fodder and straw, fed out in the fields, to winter their stock on. Few take any pains to make or save manure.

We are thirty miles from Winchester, which is our main market. Wheat flour in the mills now brings five cents per lb.; corn, one dollar per bushel; bacon, 10 cents per lb.; butter, 12½ cents per lb.; eggs, 10 cents per dozen; laboring hands on the farm, 50 cents per day and board; mechanics, from $1.00 to $1.50 per day and board. Yours respectfully, P.

Wardensville, Hardy Co., West Va., Aug. 2, 1867.

THE DAIRY IN ILLINOIS.

The Fox River Valley in Illinois is well adapted to the dairy business, as it has streams, springs, and the soil is favorable to grasses. Like most other portions of the West, it was for many years after its settlement devoted to grain growing. It is only about twelve years since farmers turned their attention to stock growing and dairying. On the 19th of June, a convention of the dairymen of this section was held at Elgin, at which it was stated by Judge S. Wilcox, that within a radius of five miles of that place, 2,000,000 gallons of milk are produced, bringing to that community from $200,000 to $250,000 annually.

From the report of the *Chicago Republican*, we make the following extracts of the remarks made by several of the dairymen present:—

Mr. McLean said:—The factory with which I am connected was commenced the 1st of May, 1866. We worked last year 95,000 gallons of milk in five months. We are increasing all the time. We sold 83,000 pounds of cheese last year, averaging about ten cents per pound. We are manufacturing 1,000 gallons of milk per day now. In May we worked 15,550 gallons of milk, and made 14,079 pounds of cheese. The amount of the present month will be larger proportionally, for when the air is clear, and the days bright, we get more milk and make better cheese than on wet, lowery days. It required about 9 38-100 pounds of milk to make one pound of cheese in May; in April, about 9½ pounds, I think.

The amount and quantity of the product of milk depends largely upon the degree of kindness to cows. I have learned that if we get one or two cows irritated, and put their milk with that of other cows that have been kept quietly, it will sour very quickly. This will account for the fact that milk so often sours in transporting to Chicago, when the usual precautions are taken to prevent it, while it does not sour with only the same care in other cases.

Milk should be put into the water as soon as it can be after it comes from the cow. The cover should be taken from the can at first. You should not stir the milk while cooling it. If milk has to be taken any great distance to a cheese factory, it should be cooled first.

A gentleman made the following statement concerning the Hanover factory, two and a half miles east of Elgin: It is owned by three men. We commenced the 1st of April with 330 gallons of milk; this morning we had 1,308 gallons. In April we received 13,000 gallons of milk, and made 13,780 pounds of cheese. In May we received 30,000 gallons of milk, and made 29,836 pounds of cheese. A portion of the milk received was not manufactured.

The weather has something to do with the amount of cheese to be got from a given amount of milk; but a skilful dairyman will adapt his process to the change of atmosphere, and will make about the same quantity and quality of cheese from the same amount of milk, every day in the year. This gentleman was asked if he could communicate the process in words. He replied that he could not; it was only to be attained by practical experience.

RELATIVE PROFITS OF BUTTER AND CHEESE.

Mr. Wilcox stated there were some advantages in selling the milk, as compared with carrying it to the factory for cheese manufacture.

Mr. Treadwell had been sending milk to Chicago ten years. Latterly, he had been trying to convert his herd of cows into a summer dairy. He is satisfied that it will cost far less to keep his stock in winter, will diminish the expense for labor in the aggregate for the year, and that the aggregate profit for the year from the same number of cows kept as a summer dairy, would be greater than if milked both summer and winter. He had found the profit derived from his milk, when sent to the cheese factory, to be full four cents per gallon greater than when shipped to Chicago; the extra expense for cans, the freights, the loss of whey, which prevents the raising of calves and pigs,

are considerable items in favor of the cheese factory.

Mr. Wilcox reminded the advocates of the summer dairy system that if it cost more to make and dispose of milk in winter, they also got a greater price for it. He milked on an average twenty-nine cows last year. He sold from them 16,486 gallons of milk, which brought him $2,544. He raised and sold calves which brought him $125—a total of $2,669 from his dairy. During five months he shipped his milk to Chicago; the balance was sold at the condensing factory here. He fed his cows pretty strong. When he first commenced in the business, he thought it would answer to feed them on hay and corn-stalks. He soon learned differently, and added bran to the feed. Found this increased the milk, but ran down the cows. He then commenced grinding corn and oats, using one part oats and two parts corn. Finally, he added to these one part of bran, and fed four quarts of this bran to each cow, twice a day. This produced a steady flow of rich milk, and kept the cows in excellent condition and healthy. He was satisfied it was profitable to feed cows well.

Other gentlemen testified in favor of the summer dairy system, and conceded the great benefits derived from the creation of a home market for their milk, by diverting a part of the product from Chicago.

J. M. Treadwell had been in the business ten years. He had been particular to buy young cows; can get more milk, of better quality, and at less cost, from them than from old. Milks at regular hours; aims at this time of year to finish before sunrise in the morning; in winter, gets through milking before five o'clock; divides the day nearly equally as to time of milking; does not allow milkers to wet cows' teats when milking; it is a dirty practice, and has turned off milkers who persisted in doing it; washes and wipes his cows' bags when they need it before milking; uses tin pails to milk in; does not use wood; examines carefully all utensils before using them, to see that they are not tainted; uses a sieve strainer with a white worn flannel beneath it; does not use cotton strainers; prefers worn flannel because it does not full up; is particular about the cans; washes them inside and out with soap and soft water, and then scalds them thoroughly with hot water; is careful to scald the neck of the can, because that is where the taint is, if there is any; boils the cover some minutes in cleansing; with these precautions he loses no milk.

He cools the milk before shipping it; has a vat of cool water in which he sets it; takes the covers from the cans during cooling process; does not stir it while cooling; does not mix warm milk and cool milk together; water passes around and beneath the cans in the vat; salts cows every five days in summer; after salting, the milk increases from two to five gallons; cows will not eat salt much oftener than once in four days.

He fed his cows bran all last summer, with profit; last winter fed barley meal and bran; has no fixed rule in feeding, but feeds each animal an amount proportionate to her size, the amount of milk she yields, and his estimate of the requirements of her nature; such as need most he gives most; feeds one part barley meal, or corn, and one part oats, and adds one part bran; oat meal yields the most milk; barley meal is as good as corn meal; aims so to feed as to keep the cows thriving; the better humor cows are kept in, the more milk they give, therefore feeds just before milking, and sometimes during milking; never allows a cow to be whipped; does not milk cows out of doors, summer or winter; can milk them in less time when in the stanchions.

A. D. Gifford, of the Hanover factory, stated that he found no difference in breeds as to milking qualities; cuts hay when it is in blossom; likes corn-stalks, if cut early and well cured; would as soon have half clover as all timothy; second growth of clover makes the most and best milk of any hay he ever used; is going to raise his own cows, breeding to sires of good milking families; finds there is only about one good cow for sale to every three dairymen who want her; regards the fact that the sire's parents were of good milking breed important in breeding; believes it is as well, or better, to have heifers come in at two years old, if the feed given them is sufficient to keep them thriving, as it should be. Two years ago, winter milking was profitable, because feed was cheap and milk high; but those who fed and milked last winter barely paid expenses; would have a cow go dry at least two months.

Mr. B. Duff, from Huntley, stated that the farmers in his neighborhood had tried to induce men of experience in the cheese dairy business to start a factory, offering them inducements to do so. Failing, twelve of them gave $100 each, built a factory, and were now receiving more milk than they could manufacture, and had that morning been compelled to refuse to receive a large quantity.

HOW TO MAKE TURKEYS USEFUL.

In Normandy, France, where the Creve Cœur hens are principally raised, they have a curious fashion of hatching the eggs. As the hens are seldom inclined to sit, and are at best only ordinary mothers, the good women of the peasantry have a fashion of pressing young hen turkeys into the service. This they do in the following way: Take a female turkey of the preceding year that has never laid, and put her in a basket containing plaster eggs. Cover this basket with a strong linen cloth. It will be from four to six days before she will overcome her natural disinclination to set, and become attached to the eggs,

or as the French have it, "take an affection" for them. When the prejudice is entirely overcome they place the real eggs under, she easily covering 18 or 20 of them. The covering is removed and the innocent turkey accomplishes the task assigned her without further trouble, save that it is necessary to remove her once a day that she may partake of refreshments. If this is not done these "sitters" sometimes starve to death, rather than voluntarily leave their charge, so great is this forced affection. After hatching, the little chicks are placed in charge of another turkey that may not have all she can raise and which is kept for bringing them up, and the original turkey mother supplied with a new lot of eggs, continues her "mission." These young turkeys are thus made to hatch three or four "litters" in a season.—*Paris Cor. Prairie Farmer.*

IMPORTS OF WOOL IN 1866 AND 1867.

We have been able to obtain from an official and perfectly reliable source the following heretofore unpublished statistics, giving the quantity and class of wool entered at the New York Custom House during the first six months of 1866 and 1867 respectively:—

FIRST SIX MONTHS, 1866.

Class 1, "Clothing Wool,"	23,692,043 lbs.
Class 2, "Combing Wools,"	
Class 3, "Carpet Wools, and other similar wools,"	4,839,533 "
Total	28,531,576 lbs.
Noils	13,737 "
Camel's Hair	408,417 "

FIRST SIX MONTHS, 1867.

Class 1, "Clothing Wool,"	4,346,183 lbs.
Class 2, "Combing Wools,"	122,796 "
Class 3, "Carpet Wools, &c.,"	8,240,652 "
Total	12,709,631 lbs.
Camel's Hair	163,839 "

We are authorized to say that "most all of Class 1, imported since the present tariff went into operation, was entered *in bond*, and it is presumed either remains in bond or has been shipped out of the country."

We need not remind our readers that Class 1 embraces all the foreign wools which compete *with any kind of wool grown in the United States*, except "combing wools of English blood." During two months of 1867 (January and February) the present tariff was not in operation. Yet considerably less than *one-fifth* as much "clothing wool" was imported in the first half of 1867 as in the first half of 1866; and most of the small amount imported in 1867, as has been stated, *remains in bond, or has been exported to other countries!* It has not been brought into competition in market with our own wools. Who now shall say that the tariff has not been as effective in shutting out foreign competition as was expected, or as can be reasonably desired by the great mass of the wool growers of our country!

There is, it is true, a gain in the import of "combing wools"—but the amount is inconsiderable. Very probably the wool was entered before the passage of the tariff. At all events, the imports of this class of wools *into all our different ports*, especially those of the Canadian frontier, will fall off during the year probably in about equal proportions with those of "clothing wools." Our foreign supplies were mostly drawn from Canada, and it is notorious that the last clip of that country is unsold—that the market is utterly flat—and that the impression is now prevalent there that under present duties the English market will prove a better one for them than ours.

The import of "carpet wools" nearly doubled. These compete with no wools now grown in the United States, and their increased import therefore does not affect our growers, provided no frauds are practiced—provided other wools are not invoiced, and pass our Custom Houses under that name. Are such frauds practiced? Not, in our opinion, in New York. John A. Baush, who appraises every invoice of wool entered at that port, is an old, experienced, perfectly competent, and we believe thoroughly upright officer—the very man we would put in the place, were the appointment made by us. We have made inquiries in respect to the officer at Boston, who has the appraisement of wools under his charge. We learn that he has not had an experience on the subject extending much beyond two years—a thing certainly much to be regretted—but he is regarded among the business men of Boston as a man of integrity, and he has, it is said, an official under him in this department who is a very experienced judge and appraiser of wool. With this aid, and the aid of the standard samples, an upright man can discharge his duties faithfully.

These are the principal ports of entry for foreign wool, but there are others which deserve attention. We trust our friends who have any opportunities for ascertaining the character and conduct of wool appraisers, in any of them, will keep the officers of the National Wool Growers' Association informed of the facts. It is one of the most obvious duties of these officers to keep watch and ward on the subject of a fair and just administration of the law, and to expose any frauds practiced by its administrators. We, for one, are prepared to do the latter *with a will*, should occasion demand it.—*Rural New Yorker.*

HUNGARIAN HAY FOR SHEEP.—My experience in feeding Hungarian hay to sheep is rather limited; however I have made close enough observation to conclude that it is injurious, unless great care is taken, as it affects sheep as it does many horses. If it is fed cautiously, perhaps it could not hurt them, but I fed several tons of it last winter, to my sheep, twice a day, and they looked well, but after a while quite a number of them began to get stupid, and would not keep with the flock, and lingered along for several days, and a number of them

died. Not having any idea of the cause of their death, I made a post mortem examination and found them the fattest sheep that I ever dressed. When I came to the intestines I found them in a very bad condition; apparently under the inner lining of the intestines there had formed hard balls of various sizes, which proved upon examination to be Hungarian seed, and I came to the conclusion that that occasioned their death. Many of them would linger along for a week or ten days and finally recover. My Hungarian was ripe when I cut it.—*S. M. Y., in Prairie Farmer.*

AGRICULTURAL ITEMS.

—It is estimated that Sauk county, Wis., will yield $2,000,000 worth of hops this year.

—Mr. Oliver Wilkinson, of Townsend, Vt., has a ewe sheep that has had and raised twenty-two lambs in eleven years.

—Mr. Horace Hurlbut, of St. Johnsbury, Vt., sheared sixty-seven sheep in one day this season for Mr. Moses Huntley, and he did the work well.

—In the upper part of New Hampshire, the storekeepers pay farmers but a shilling a pound for excellent butter.

—Harvest hands get $2 a day in Marion county, Iowa, and reaping machines get $1 an acre for cutting.

—Less skill is required to make whiskey than vinegar. In Germany, they have a vinegar school where the students graduate in four months.

—L. Lindley, Connellsville, Fayette County, Pa., says that his father always kept on hand pickled pork as a preventive of the ague, while families which did not have a supply had the disease.

—There are now in the State of New York more than 500 cheese factories, using the milk of over 200,000 cows. From Herkimer county alone, 18,172,913 pounds of cheese were shipped last year.

—The term "spare rib," as applied to the rib of a hog, is of English origin. The custom there of cutting the sides of a hog lengthwise into "flitches," close to the ribs, leaves the ribs very sparely supplied with meat; hence the term.

—G. W. Howe, Mt. Vision, N. Y., assures the New York Farmers' Club that he has not known the following prescription to fail of curing bots in a single case for over thirty years:—One pint of lard a little above milkwarm and poured down a horse.

—In reply to a correspondent at the North, who asks to know the best place at the South to raise small fruits for market, Mr. Meeker of the *Tribune*, says, "Stay where you are. The earliest cucumbers in New York are not from the South, but from Boston. Let those who will, languish with fevers, and long for the cooling stream, where insects fill the air and drop from the ceiling; let who will, crush cabbage worms by the hour; start, while at work, from the hiss of the adder, and anxiously look to the south west, over parched fields for signs of rain; but let us cling to the grassy horizon of the North."

—A correspondent of the *Prairie Farmer* says that throughout the corn region of Central Illinois, the riding or wheel cultivators are fast becoming unpopular, and the walking double cultivators are taking their place. An improved double-shovel plow is becoming very popular there, and it is thought will prove of great value in cotton and tobacco fields.

—Mrs. M. W. Hayward, of Natick, Mass., writes to the New York Farmers' Club, that some of her neighbors have been paying a dollar for this recipe for washing fluid: 2 lb. of sal soda, ¾ lb. of unslaked lime, 2 gallons boiling water. Let it stand till perfectly clear, then put in bottles. Soak the clothes over night—half pint fluid to a boilerful—soap them and boil an hour. It is good.

—One beet sugar establishment in Germany has a capital of $16,000,000, employs 3000 operatives, and occupies buildings which cover twelve acres of land. European makers annually dispose of 400,000 pounds. The importance of the attempts, in this country, to encourage this branch of industry is illustrated by the statement that during the year ending July 1, sugars valued at $39,595,677 in gold, were imported into the United States.

—Texan papers assert that the various patent processes for preparing beef for northern markets, by canning, infiltration, &c., have practically failed. By the introduction and use of ice machines, by which ice is manufactured on the premises, the atmosphere of the rooms in which the beef is packed, is kept so cool that the meat does not spoil during the operation, and cattle may now be slaughtered during the warmest months of the year, at which time they are in the best condition.

—A contributor to the *Farmer's Advertiser*, says that by feeding young colts a considerable amount of grain, in conjunction with hay and other light articles of food, they thrive better, and their limbs become better knit than when fed only on light food. If a proper supply of food be withheld while an animal is young, it will be injured in its constitution, and consequently in its value, to a far greater extent than any saving that can be effected in its feed.

—Man's inhumanity to cows is often illustrated by abuse of the animal for restlessness caused by the pain inflicted in milking by sharp finger nails. Mr. J. F. Furman, Segel, Iowa, writes to the New York Farmers' Club that one of his cows had always been very sensitive, but that after he commenced milking by clasping his fingers clean around her teats so that his nails could not hurt her, she become gentle. Some cows will bear the pressure of the finger-nails and not resent it, while others will flare up on the first grasp, and knock the pail across the yard; then comes pounding and

kicking. Let us be careful with our cows, and not act without thinking.

—A correspondent of the *Rural American* gives the following directions for making cheap "boxes" to put around vines to keep off hens and bugs: go to the woods, cut down basswood, measure off six feet, cut round the tree, split open the bark on top, peal the bark off, and take it to the house; saw across, in pieces about six inches long; bore a small hole close to the edge where split open; tie a string to keep it fron rolling up, from heat of the sun, and the boxes are done.

—Dr. Hull, of Alton, Illinois, who recently visited the southern portion of the State known as Egypt, found orcharding carried on to an extent that bids fair to overstock the whole West with fruit. He passed from orchard to orchard—two to twenty thousand trees were common; one man had planted 15,000 pears the past spring, and would plant 30,000 more this fall. Strawberries had paid enormously; 250 bushels to the acre, netting $5.75 per bushel, was not an exceptional case.

—After the Solons of the New York Farmers' Club had gravely decided, at a recent debate, that the only practical means of protecting fruit from the fatal sting of the curculio was to jar them upon sheets and destroy them piecemeal, Mr. Robinson said: "Nothing but thunder and lightning would jar my apple trees, for they are fifty feet high. Nor could I hire help enough for $200 to catch the curculio among the thick grass, $100 worth of which would be destroyed; but even if I should go into all this business, I do not see what good it would do, for they would come from my neighbors' trees, and then where would I be?"

—In a note to the New York Farmers' Club, Mr. Storrs Burrows, of Oneida County, N. Y., says the past May was the worst for the farmer in 47 years; the greatest number of rainy days and the least sunshine in any May since 1820. It has thundered three different days. White frost the 10th, 16th, 21st, and 27th. Snow the 14th. On the 4th, ground froze sufficiently hard to bear up a horse. We have had 7 and 46-100 inches of rain; 4-100 of snow. It rained from the 5th to the 9th, from the 13th to the 15th, from the 17th to the 20th, and from the 22d to the 31st, every day. Cows are not giving more than two-thirds of the usual quantity of milk. Our cheese factories complain of light yields.

EXTRACTS AND REPLIES.

GRAFTING THE GRAPE VINE.—EGGS ON SQUASH VINES.

How shall I graft my grape vines? When and where shall I cut off the top? When set the scions and how many buds on them? Will the eggs that are on the under side of squash vines mature if scraped off with the nail on to the ground? How prevent maggots from destroying squash vines? How get rid of witch (or joint) grass in the walk, border and lawn? One of my neighbors says, keep it from going to seed and it will die, like asparagus, and that it will not come up from the seed, but neither seem reasonable. One more, when and how set slips from currants?

A NEW SUBSCRIBER.

Campello, Mass., Aug., 1867.

REMARKS.—We have never grafted the grape vine, and shall be glad to have some experienced person enlighten our correspondent.

We think scraping the eggs of the squash bug from the under side of the vine, and dropping them upon the ground, would destroy them, as being attached to the leaf is their natural position.

We cannot inform you how to prevent the maggot from entering and destroying squash vines.

See recent discussions on witch grass in the FARMER.

To multiply currant bushes, cut slips of the new shoots next spring, and insert them in moist soil to the depth of six to ten inches, leaving two or three buds out. It is better to dig a hole with a trowel than to make one by thrusting a stick down, because that makes the sides of the hole very hard, and young roots will not strike into the soil so readily as when it is lighter.

CLAY ON SANDY AND GRAVELLY SOIL.

A neighbor of mine, Mr. H., has a piece of land of a gravelly and sandy soil. It is warm, quick land, and will produce good corn and grain by putting on a large supply of manure every year. I have been acquainted with the land for twenty-five years. Near it there is a bank of clay, which is very convenient for carting. For the last six years Mr. H. has been dressing this hungry soil with this clay, with remarkably good effect. He says he had rather have a hundred loads of clay than a hundred loads of manure on that land. The manure may produce the largest crop one or two years, but the clay is more permanent in its effects, and in four or five years will produce more than the manure.

I saw the land and examined the crops on it last week, and believe Mr. H. is correct in his statements. The corn had been badly injured by the worms, but the oats were splendid. He said that he could keep the land in good heart with the clay dressing. It should be plowed up in the fall and exposed to the operation of frost during winter. It then becomes fine, is easily shoveled, and readily mixes with the soil. He tips up a load in a place, spreads and plows it in. As there is plenty of such light soil in New England, and as I believe such beds of clay or other suitable material are more frequent than is generally supposed, I have thought this statement of my neighbor's success in the improvement of his field, might benefit others. Wherever the situation is such that twenty loads per day can be carted by one team, such dressing will prove a good investment. We cannot much longer subsist without replenishing our lands in some way.

O. FOSTER.

Tunbridge, Vt., Aug. 11, 1867.

REMARKS.—Such brief hints from actual farm practice are the cream of our agricultural papers. Much has been written about manures, and much more must be written before the subject of plant nutrition is fully understood. The mechanical effect of a dressing of heavy soil upon a light one, or of sand and gravel upon a heavy soil, is more readily understood than is the chemical effect

often witnessed from the mere commingling of soils. To farmers who are so situated as to be unable to buy, or to make the manure necessary to keep up the fertility of their fields, the subject is one of interest.

WILD PIGEON.—*Columba Migratoria.*

This well known bird, commonly called the passenger pigeon, is remarkable for the great rapidity and elegance of its flight. It is supposed to be capable of moving through the air at the rate of a mile a minute. The most singular fact in the natural history of the pigeon is their countless numbers. Audubon saw a flock that contained "one billion, one hundred sixteen millions." One may live many years and not see such a flock as this, though once a year you may see pigeons enough to astonish you. The passenger is smaller than the common house pigeon. Its color is nearly a uniform slate. The colors are deeper in the male, and the neck feathers present the same changeable hues common to all birds of this species. It is only when freshly caught or killed that these brilliant tints of green and gold can be seen to perfection. They fade immediately after the bird is shot. A pigeon roost is a curiosity well worth seeing, and no language can give a perfect idea of the appearance of the place when occupied by its tenants. They come by thousands in a flock, and settle upon the trees around, and the confusion is increased by the upper limbs breaking, owing to their great weight, and falling with a crash upon those who have alighted beneath, carrying death and destruction with them. A noisy scene it is. The clapping of a million pair of wings sounds like the roar of thunder. The passenger pigeons breed in all parts of the United States, and they are often found as far north as Hudson's Bay. The nests are built upon high trees, resembling immense rookeries. The eggs are generally two in number and pure white. Like the common kind, they breed several times in a season. H. M.

Northampton, Mass., 1867.

REMARKS.—When a boy, we used to see pigeons enough every spring to "astonish" one. We have seen but few of late years.

LUNAR INFLUENCE.

I recollect hearing people talk, when I was quite a lad, about killing pork, sowing grain, cutting bushes and herbs, and doing various other kinds of labor at a particular time in the age of the moon. The idea always seemed absurd to me, and as I grew to the age of reflection, I concluded there was no ground for such a belief. I commenced a series of practical observations for the purpose of ascertaining, if possible, the truth of the prevalent theory.

When I began to do business for myself, I often took some pains to do such work as was said to be affected by the moon, at the *reputed wrong time*, and I have never been able to discover any difference in my crops, in either field or garden, nor between my own crops and those of my neighbors, other circumstances being equal.

I have always found that those farmers succeed best, who plow their land well, and sow and plant when the ground is in a proper condition to receive the seed, without any reference to the lunar orb; in other words, that farming on the *earth* is more reliable than farming in the *moon*.

Among the many whims about lunar influence, is one which I heard last spring. The weather had been very wet for some time, and some people began to be despondent. Calling at a shop to transact some business, the good lady of the house said, "Do you know we are to have twenty days of rainy weather in succession?" I replied, "No," and asked the reason. "Because," said she, "the *moon changed on Saturday!*" I was further informed that a *change* very seldom occurs on that day. Upon further inquiry, I ascertained that this profound knowledge was obtained from the *Almanac!* I was somewhat surprised at so much ignorance, but made no reply. I came home, and at the first opportunity, I examined the Almanacs for several years past, and ascertained, what I had no reason to doubt, that the new moon occurs once or twice on that day of the week nearly every year. I did not think it worth while to look farther back than 1860. In that year *two changes* occurred on the ill-omened day; in 1861, three; in 1862, two; in 1863, one; in 1864, two; in 1865, two; in 1866, one; in 1867, two; *fifteen times in eight years.* By this it will appear that a new moon on the last day of the week is no great rarity. I believe it occurs as often on that day as on any other. Now in regard to the weather following such changes. I find by reference to a meteorological record which I have kept nearly twenty years, that in the twenty days next succeeding each of the above mentioned changes, not more than eight were at any time attended by rain, until this year, when after the change, 5th mo. 4th, rain fell in *eleven* days.

Like the belief in *ghosts* and *witches*, the idea that the moon exerts a powerful influence over animal or vegetable life must yield to the light of knowledge, and will ere long be remembered as a relic of superstition.

I resolve the whole theory of lunar influence upon vegetation into *moonshine*, thus: the moon is just as large one day as another, and its mean distance from the earth is nearly the same, hence the force of its attraction must be about the same at all times,—this is shown to be the case by the regularity of the tides. Now the different phases of the moon are caused by a greater or less amount of light reflected from that luminary; consequently, if the change, quarter or full, exerts the influence claimed by some, it must be caused by the amount of reflected light; in other words, by *moonshine!*

Reflect upon this, ye who deem pale Cynthia so pnissant! Lay aside your prejudices, and exercise your reason. Never take an assertion for fact, even though it may have descended as an *heir-loom*, through a long line of venerable ancestry. L. VARNEY.

Bloomfield, C. W., 7th mo., 1867.

SUBSTITUTE FOR POLLEN.

Your New Hampshire correspondent "F" wishes for a substitute for "bee bread." I would like to copy an article from Langstroth's work on the honey bee, for him.

"Though the importance of pollen has long been known, it is only of late that any attempts have been made to furnish a *substitute*. Dzierzon, early in the spring, observed his bees bringing rye meal to their hives from a neighboring mill, before they could procure any pollen from natural supplies. The hint was not lost; and it is now a common practice in Europe, where bee-keeping is extensively carried on, to supply the bees early in the season with this article. Shallow troughs are set in front of the apiaries, filled about two inches deep with *finely-ground, dry, unbolted rye meal.* Thousands of bees, when the weather is favorable, resort eagerly to them, and rolling themselves in the meal, return heavily laden to their hives. In fine, mild weather, they labor at this work with great industry, preferring the meal to the old pollen stored in the combs. They thus breed early, and rapidly recruit their numbers. The feeding is continued till the blossoms furnishing a preferable ar-

ticle, they cease to carry off the meal. The average consumption of each colony is about two pounds."

I have used rye meal for two years with good success. SELRANC.

Worcester Co., Mass., Aug., 1867.

TO CURE MILDEW ON GRAPE VINES.

One pound whale oil soap, dissolved in one quart hot water. Add to this one pound pulverized sulphur and eight gallons soft water. Let it stand from six to eight hours, stirring from the bottom of barrel or tub, three or four times, when it will be ready for use. Stir well before using, and apply with garden syringe. Do not fear, for it will not injure the vine or fruit. Let every leaf have a dose, and the enemy is defeated. It is a cheap and reliable remedy. I have used it with success this season on one hundred and eighty vines, after all other "cures," as they are termed, had failed.

East Walpole, Mass., Aug. 10, 1867. J. M.

THE RANGE OF BEES' FLIGHT.

This is a subject of great importance to bee-keepers, as it has been supposed that bees fly only about three miles when collecting honey, consequently there was a fear of overstocking an apiary. Having ascertained that there were no bees on Kelly's Island (Lake Erie), in the spring of 1866 we established an apiary of the Italians there, for the purpose of rearing pure queens and ascertaining the flight of the Italians for feed. In less than a week after they commenced to fly, they were busily at work on the other end of the island, more than *five miles* from the apiary. This season we intend to carry some of the bees in a boat off on the water, and put them to work on feed, and ascertain just how far they will work from the hives. We are of the opinion, however, that they will not fly as far across the water as on the land, where there is a continuous supply of flowers to call them from the hives. We will report further on the matter at the close of the season. W. A. FLANDERS & CO.

Shelby, Ohio, 1867.

REMARKS.—We shall be happy to publish the result of your experiments. Such statements of facts are worth far more than mere theorizing.

SALT THATCH TO COVER STRAWBERRY PLANTS.

Will you inform me, through the FARMER, whether salt thatch would be good covering for strawberries in winter? A. GREEN.

Amesbury, Mass., 1867.

REMARKS.—We have no doubt it would. All covering should be slight, and whatever saline matter was washed from the thatch would be very slight, and we should think would prove useful. However, we have never known it used, and would advise to employ it cautiously.

STANCHIONS FOR CATTLE.

I noticed an article some time since in the FARMER, written by "C. H. W." of Wiscasset, objecting to stanchions as "barbarous," &c. I will allow that the stationary ones are so, but I am using, as are many others in this section, a kind that are as easy as chains, while they are more safe, convenient, and much better every way. There are many disadvantages in the use of chains. They are not safe, cattle often getting badly hurt or killed; they break and let the cattle loose; they are unsafe for children to tie with, and inconvenient for any one. I turn out my cattle twice each day in winter, and once a day in summer, which makes about 1100 times in one year, so that the saving of labor with stanchions is quite an item, especially as small children or women can occasionally take care of the cattle, who could not if they were fastened with chains. Cattle get very dirty in chains by lying in the manure, getting wet and uncomfortable, while in my stanchions they lie to one side of where they stand and keep themselves much cleaner. A. L. W.

Hope, Me., Aug. 2, 1867.

CUTTING GRAIN.

Having a piece of grain so badly beat down and crippled by the late storms, that we were unable to cut it with the cradle, we determined to try it with the mower; raking off by hand each swath as fast as cut by the machine.

We found this plan to succeed quite well, and the grain was gathered in bundles, as nearly straight, perhaps, as could have been done in any other way, from the bad condition the storms had left the field.

There was, however, one serious objection to this plan. The team had to stand still much the larger part of the time; the two rakers not being able to gather near as fast as it fell from the knives of the machine. There were about three acres of the rye, and after spending two or three hours on it we found the field was not cut by considerable.

Another expedient was then hit upon, which succeeded somewhat beyond our expectations, and we have thought that some account of it might perhaps furnish a hint to some reader of the FARMER, in like circumstances.

The plan was as follows: a piece of stout rope, some five or six feet in length, was procured. One end of this was made fast to the outside shoe; the other end was knotted and slipped into the slot of the "bar latch." Another rope, a little longer than the first, was then attached to the machine in like manner. The shorter rope, as the grain pressed on it, was kept about a foot or so above the longer one. The longer one was kept on the ground by the weight of a stick four feet in length and about the size of a fork handle; the stick having a short fork or crotch on the end next the straw. This served to gather the grain by sweeping it along with the machine as it fell.

When a good lot of it was thus gathered—say fifty to a hundred pounds—the machine was stopped, backed up a little, and the grain, with but little trouble or delay, taken up and laid in bunches ready for binding. The straw falling in one direction was swept along as fast as cut, the butts coming together nicely, while the heads, from laying in all directions, were necessarily gathered in about the same positions; though occasionally a lot was found wonderfully straight and even.

Now, neighbor farmers, we don't pretend that this will serve every purpose just as well as a reaping machine, though the reaper is far from being as perfect a machine as the mower. But one thing is certain, we shall not wait very long "for the man to get ready to come to do our cradling" another year. R.

Chestnut Hills Farm,
Norfolk, Mass., Aug. 15, 1867.

BEE-BREAD—MANAGEMENT OF BEES.

Your correspondent, "F.," must be mistaken in supposing that his bees died from the lack of bee-bread. I have kept bees for ten years, but I never heard of bees dying from this cause before. I know that bee-bread alone will not keep bees alive; and I also know that honey will, as long as they can get it. Many colonies starve every winter, even when there is plenty of honey in the hive, owing, in part, to the way the comb is built in such

hives. Bees sometimes build their combs down, without leaving any holes to pass through from comb to comb, and if the owner fails to make any winter passages in the fall, three colonies out of five will die before spring.

Now I contend that all bee-keepers should know how the combs are built in this respect. He should also see to it that they have plenty of honey, a good queen, and are free from worms, &c. Any bee-keeper who has the frame hives in common use, can know all about his bees at any time during the winter or summer, and if he does not attend to these things he will probably find bee-keeping unprofitable. We are using a frame hive here (in Essex County, Mass.,) which is as near perfect as a hive can be, for wintering bees. We have wintered bees in them for the last two seasons, and when these hives were opened in the spring, they were found to be free from mould or moisture, and the combs were as clean and bright as at any time during the summer. Bees in these hives do not consume near so much honey during the winter, as those do which are in common hives. The hives were described by your correspondent "W." in the Farmer of August 10.

Mr. John Gould, of Wenham, had fifty-one stocks last spring; twelve of which were in the hives alluded to, and these colonies were the first ones to swarm, and the colonies which made the largest amount of surplus honey. These hives are so constructed that corn cobs can be placed in the winter directly over the bees, which keeps out the cold, preserves the heat, absorbs all the moisture which rises from the bees, and secures good winter passages for the bees to pass from one comb to another.

If your correspondent had such a hive as this, he would lose less bees, and have better success, generally, in keeping them. H. Alley.

Wenham, Mass., Aug. 20, 1867.

MURIATE OR BUTYR OF ANTIMONY.

Has any one ever used Butter of Antimony for foot rot in sheep, so that they can tell us whether it will cure, without any thing else, if applied to the foot, and whether it as good as vitriol?

Roxbury, Vt., Aug. 20, 1867. Y. F.

Remarks.—We are not certain what our correspondent means by the expression, "without any thing else." Water will put out fire, "without any thing else." But if a fire is kindled in the ceiling of your house, floods of water dashed against the outside clapboards, or the inside walls, might not quench it. The experienced fireman, in such case, would at once make an opening, and "play away" directly upon the fire. When the heat and blaze were subdued, he might "hold on," but he would carefully examine for some smouldering heap, or mere spark, which, having escaped his stream of water, might kindle into a new conflagration. Thus with the inflamed foot of the sheep; the remedy must be applied directly to the diseased part, and so thoroughly as to "put out" every spark or germ of the disease, or a radical cure will not be effected. It is difficult to do this when the disorder has secured a lodgment under the hoof and about the claws of the poor sheep. And it is idle to expect that any "application to the foot" of the best medicine in the world, "without any thing else," will infallibly cure so insidious a disease as the hoof-rot. With the proper preparation of the foot, and the necessary subsequent care, we presume that butyr of antimony is a reliable remedy. A correspondent of the Ohio *Farmer* says that he has cured over four hundred sheep by its use. He pares the hoofs of those that are affected very closely, cutting away carefully every diseased part, then with a feather, or small brush, applies the antimony very thoroughly. He also brushes in a little between the hoofs of those which show no signs of the disease. He overhauls all his sheep once in two weeks, and generally finds five or six applications to remove the disease entirely.

After specifying ten recipes that are in common use, the most popular one in Central New York being 1 lb. vitriol, ¼ to ½ lb. verdigris, 1 pint linseed oil, and 1 quart of tar, Dr. Randall says "any of these remedies, and fifty more that might be compounded, simply by combining caustics, stimulants, &c., in different proportions and forms, will prove sufficient for the extirpation of hoof-rot, *with proper preparatory and subsequent treatment.* On these last, beyond all question, principally depends the comparative success of the application." Consequently, we cannot recommend the butyr of antimony "without any thing else."

GARGET IN COWS.

Will you or some of your numerous correspondents, tell me what I shall do for my cow? She has what is called the garget in her bag. What is the cause of it, and how shall I treat it? By replying to the above you will much oblige one who has taken the Farmer as many years as any other person. P.

Hinsdale, N. H., Aug. 21, 1867.

Remarks.—This disorder, which it is feared is on the increase in our dairies, is ascribed to various causes. It is sometimes produced by external injury. It is often ascribed to colds contracted by exposure to the changes and storms of our climate. While others believe that, like the gout in the human foot, garget in cows often results from high feeding, and from the preternatural development of the lacteal organs produced by such high feeding, and by a long course of breeding for the special purpose of securing a race of deep milkers. Two years ago the subject was somewhat extensively discussed in our columns, but as we did not then print a monthly edition of the valuable suggestions of our practical correspondents, and as we furnish no index to our weekly sheet, few of our readers will be able to refer to the courses of treatment then recommended. One writer who does not object to medicines, either external or internal, if you cannot get along without them, says that whenever a cow comes home affected with the garget, he puts her in the cow-house where she has a warm dry bed, feeds her on dry hay, and allows her to go to pasture but a short time the next day—in one word, as another correspondent said, he treats her as patients should be treated with a cold and inflammation, believing that, in the particular case alluded to, the cow had actually taken cold from lying upon the damp ground. Frequent milking, with gentle and patient rubbing

and kneading of the bag, and washing with warm water; or spirits and water; or camphor and vinegar; or soft soap diluted in water; or lime water, about as thick as white-wash, mixed with an equal quantity of flax seed oil, well beaten together with a knife, as an ointment; or tincture of arnica, with twice as much water, or rum and water; or bitter sweet ointment, or any similar application that requires or encourages much rubbing and working of the bag. To move the bowels, a good mess of potatoes, or garget root, or horseradish, or from four to eight drops of tincture aconite dropped on a piece of bread, and mixed with her feed, or, as was confidently recommended, by Mr. G. W. Stearns, of Brookline, Mass., a heaped spoonful of saltpetre well mixed with any "mess" the cow will eat, may be administered.

WAS IT A "FAILURE?"

H. Griffin, Esq., Essex Junction, Vt., says: "That winter wheat, that I told you I was going to sow last spring, which was frozen and sprouted before sowing, as well as some I sowed in the field dry, proved a failure." Should Mr. G. sow his *spring* oats and garden seeds in the *fall*, we should call it a *blunder*, not a "failure." Winter wheat is not to be sown in spring. We cannot tamper with natural laws. H. P.

Brooklyn, L. I., Aug. 23, 1867.

WHAT WE WILL DO.

But though part of our time should be given to mirth.
A part, too, we'll spend in improving the earth,
For we'll rise with the dawn,
Plant squashes and corn,
Potatoes and roots,
And all kinds of fruits;
Keep bees for their honey,
And thus save our money
To provide us with plenty in seasons of dearth.

SUBSCRIBER.

Dedham, Mass., Aug. 7, 1867.

STRAWBERRIES.

I intend trying to raise a few strawberries, also a few blackberries, in my garden next year, if I can procure some nice plants. Can you inform me the best kinds to cultivate, and how to cultivate the same. Where can they be obtained, and at what prices? What time of year is best to set them? C. M. MANSFIELD.

West Berkshire, Vt., Aug. 23, 1867.

REMARKS.—In common with many others in this latitude, we have had poor success in ripening the Lawton and other "garden blackberries." Strawberries are as easily raised as potatoes or cabbages, if you keep the chickens and weeds out of the bed. Hovey's Seedling is still popular with our market gardeners. Probably some of your village neighbors can supply you with plants. All nursery men have them for sale. Spring is perhaps the best time for transplanting, but then you must wait till the next year for fruit. August is a good time, if rainy, or September will answer. Take well rooted runners in preference to old stumps, and don't let the roots dry. The land should be in good order for a large crop of corn. The rows may be three feet or so apart, and the plants from ten to eighteen inches in the row. We have practiced the plan of working up a slight ridge in the centre of the furrow or trench for rows, over which the roots are spread and covered, leaving the plants, if the soil is rather dry, a little below the general surface. A sprinkling of ashes is very good. A mulch of leaves, or other materials without the seeds of weeds or grass, applied in the fall, will protect the plants and make a clean bed for the fruit.

LIME AND SALT FOR HAY.

Last season the Secretary of the Little Falls, N. Y., Farmers' Club, and editor of the Utica *Herald*, opposed very decidedly the practice of using salt or lime in curing hay. He confessed that he had had no experience in the use of lime, but said that salt injures stock by compelling the animals at times to eat more salt than the system needed. He had seen cows fed on hay salted in the mow, and apparently of good quality, which produced very bad results, running the stock down thin and poor, and necessitating an entire abandonment of its use. A correspondent of the *Country Gentleman* who had abandoned the use of salt after six years' trial, alluded to the above article as pleasing evidence that one sensible man agreed with him on that subject.

On the contrary, another writer for the *Country Gentleman*, stated that he had for some twenty years used about six quarts of salt to a ton of hay, and it was free from must, and was bright and fragrant as tea. One year, his hay being cut without a drop of rain, the salt was omitted, and musty and inferior hay was the result.

A correspondent of the *Western Rural* makes the following statement:—

My hay was rather moist when I put it in the mow. I salted it, as I always do, and limed it with air slacked lime; putting on two or three quarts to the ton, at intervals, as when salting hay. The hay when fed out in winter had no must about it, and was, in quality, equal to any that had been put up. The kind was, in part, a mixture of timothy and redtop, and one lot was made up of timothy and clover.

At a late meeting of the Irasburg, Vt., Farmers' Club, the following statement was made by Mr. S. K. Locke of Irasburg, who keeps 250 sheep, 20 head of cattle and three or four horses.

Some of the hay was put in so green that, under ordinary circumstances it would have been nearly spoiled by heating; but he applied from two to four quarts of salt, and an equal quantity of slacked lime to each ton of hay, and the hay was found uninjured and in good condition, and all the stock did well, and the horses especially

gained flesh. The hay in the pitching place, where pressed hard, came out uninjured. Salt and lime do no good where the hay is dry, as moisture is required to change them and give them preserving power. He thinks they are healthy.

At a late discussion of the subject of haymaking, by the Little Falls, N. Y., Farmers' Club, Mr. Joslyn stated that he had been very successful in treating hay with lime and salt mixture.

To four quarts of salt add two quarts of lime; mix, and of the mixture use three quarts per ton of hay; scatter over the hay in the mow when the load is half off, and again when the load is off. Commenced using this mixture seven years ago, and since that time has not had a sick horse or cow. The hay can be put in green and comes out green, and with no dust. Horses fed on such hay do not have the heaves; his horses used to be troubled with heaves, but have not had any of this trouble since he commenced using the salt and lime.

SOILS RUNNING OUT.

"It is plain, we think, that lands will not run out of themselves,—but there is no doubt but they *may* be run out. An incessant cropping without any return will reduce their fertility. They cannot forever satisfy the cry, give, give, unless something be given back again. Yet Mother Earth is generous of her bounties, and gives more than she requires. She will kindly loan us the whole of her productions, if we will return them after using. By a strict compliance with this requirement, we may secure her bounties."

Some farmers appear to favor the belief that there is a natural and incorrigible tendency in all soils to "run out," or grow annually less and less productive, however great may be the attention and care bestowed upon them. This, however, is an error. That land *has* "run out," and, indeed, is perpetually seen to be doing so, under the careless management of many who style themselves farmers, is a position too apparent to admit of a doubt; but that this waste of productive energies is attributable to any innate tendency to "run out," or become unproductive when properly managed, we can no more believe, than that the atmosphere is annually becoming less capable of sustaining animal life. The quantity of oxygen contained in the latter is always the same; and in all cases fully adequate to the performance of the offices and functions assigned to it; yet, if we should confine ourselves to a room containing only so many gallons of oxygen, and which might suffice to sustain life for a day only, we should not expect to enjoy health, or to retain life, after it had been exhausted.

So with the soil. If a course of severe cropping is adopted, we find that, after a certain time, and after a certain amount of staple has been abstracted from it, its resources begin to fail, and finally become exhausted. It has produced all it is capable of producing, and to ensure a continuance of productiveness, that of which it has been deprived must be returned in the form of manure.

Could *all* the vegetable matter perfected by an acre of land be returned to it, it would, with the working which cultivated soils generally receive, be more than competent to retain it in its pristine health and vigor,—for plants of all kinds derive a portion of their sustenance from other sources than the earth, as from the atmosphere, for instance, and perhaps from other sources also,—but this is not done, and, as a purely natural and strictly inevitable result, the soils "run out."

In one of our agricultural publications, a writer, after some very judicious and well-toned remarks on the subject of manuring says:—

"I still maintain that lands will not run out of themselves. If left in the state of nature, or after having been cleared, if left uncropped, it is well known they will fully retain their natural state of productiveness. It is even asserted, and with good reason, that lands left uncropped will actually gain in fertility. And why should they not? Vegetables derive considerable part of their nutriment from the atmosphere, if therefore they are left to rot on the ground they will return to it not only all they derived from it, but also that portion which was derived from the atmosphere, except what may escape during their decomposition in the form of gas, which is doubtless considerable. But if instead of being left to rot on the ground the crop be ploughed in, then the soil will be enriched by the whole amount of nutriment which the plants derived from the atmosphere. It would, therefore, be of service to know what crops derive the greatest proportion of their nourishment from the atmosphere, as there would be an advantage in selecting those for green crops to plough in."

☞ The farmers in Amesbury, Salisbury, and West Newbury, have been deceived and sold by a dashing fellow who has been visiting them with a splendid team, selling patent machines by which great weight could be lifted—a load of hay or a ton of stones at one time—and put in any desired location. The machines were to be delivered, and their notes were taken in payment. The notes were sold in Haverhill and in second hands become good against the givers, while no value is or ever will be received.

A VERMONT REPORT ON SCOURED MERINO FLEECES.

Owners' Names.	Age of Animals.	Weight of carcass. lbs.	oz.	Weight of Fleece unwashed. lbs.	oz.	Weight of Fleece scoured. lbs.	oz.	Age of Fleece in days.	Amount of Wool grown in 1 year.	Amount of Wool grown in 1 year to one pound of carcass.	Per ct. of shrinkage in cleansing.
Rams.											
Wiley & Bosworth,* . . .	2	116		17	8	7	8½	369	7.449	.0642	56.75
Edwin Piper,*	2	120	8	18	8	6	12	355	6.940	.0575	63.51
H. & N. Locke,*	4	123		20	8	6		365	6	.0487	70.73
D. D. Williams,*	1	74		12		4	4	340	4.078	.0551	64.58
Henry Safford,*	2	127		20		4		360	.055	.0319	80
J. R. Walker, ...	1	113		15	4	5	13½	360	.924	.0524	57.82
N. P. White, ...	1	90		12		5	15½	370	.887	.0654	50.26
Ewes.											
C. Horace Hubbard,* . . .	2	60		9	12	5	14½	362	5.954	.0991	39.42
C. Horace Hubbard,* . . .	3	85		9	8	5	1½	365	5.093	.0599	46.39
E. X. Pierce,*	3	79		10	8	4	11	348	4.915	.0622	55.35
J. G. Davis,*	1	69		9		4	9	365	4.562	.0773	49.30
M. C. Roundy,*	2	62		12	8	4	9	369	4.522	.0729	63.49
C. Horace Hubbard,* . . .	3	76	8	10	8	4	3½	365	4.218	.0551	59.82
C. Horace Hubbard,* . . .	3	68		9		4	4	369	4.203	.0618	52.77
C. W. Pulcifer,*	1	49		5		3	15½	365	3.968	.0813	20.62
M. C. Roundy,*	2	53		8		3	14	369	3.832	.0723	51.62
Arthur Williams,*	1	45	8	8		3	14½	370	3.754	.0825	52.42
George Wiley,*	1	45		9		3	11½	390	3.390	.0753	58.68
M. C. Roundy,*	2	50		7		3	10½	369	3.307	.0661	47.76
Leverett Brown, ...	2	50		8		4	13	335	5.304	.1048	39.84
James E. White, ...	1	58		8	8	4	8	365	4.5	.0775	47.05
Leverett Brown, ...	1	70		12	8	4	10½	335	4.312	.0616	62.74
James R. Walker, ...	2	81		10		4	3½	365	4.217	.0520	57.82
C. W. Pulcifer, ...	2	60	8	7	8	3	10½	329	4.021	.0664	51.66
C. & L. G. Ellis, ...	1	45	8	8	4	4	3½	375	3.923	.0584	48.86
C. & L. G. Ellis, ...	1	60	8	7	8	3	10½	375	3.741	.0668	51.25

The foregoing tabular statement embodies the results of the scouring of twenty-six fleeces of wool under the direction of the spirited agricultural society of the town of Springfield, Vt., of which C. Horace Hubbard is President. These sheep were publicly shorn April 25th, under the superintendence of a committee consisting of Hon. J. W. Colburn, Messrs. H. M. Arms, B. F. Dana, and L. R. White. The sheep were weighed to half a pound, and the fleeces to half an ounce. The fleeces were tied with a uniform quantity of twine, which was included in the gross weight of the fleeces, but not in that of scoured wool. Six of the fleeces were scoured at the mill of Holmes, Whittemore & Co., in Springfield, and the other twenty at the mill of James Tilton, in Cavendish, and all under the immediate personal supervision of Henry M. Arms of the committee, and were uniformly and thoroughly cleansed, and carefully weighed.

By way of explanation of the foregoing table, the committee in their report, published in the *Country Gentleman*, append the following remarks:

The first five fleeces in the ram list, and the first twelve in the ewe list, (marked *,) are from thoroughbred Spanish Merinos, the others from grades. The weights of carcass, of fleeces unwashed and scoured, are stated in pounds and ounces; the other weights in pounds and decimals.

It is found that the average shrinkage of the Merino rams' fleeces, "shorn in the dirt," is 67 76-100 per cent., and of Merino ewes' fleeces, is 51 32-100 per cent.; that of grade ewes' fleeces 52 25-100.

For the purpose of showing to the Society the relative character of its sheep for the production of "real wool," we take the liberty to compare a few of the fleeces with those of the New York State Society, at Rochester, in 1866. The heaviest ram's fleece of that Society is 6.653 pounds scoured wool. Wiley & Bosworth's fleece, above, is 7.449 pounds, and Mr. Piper's, 6.94 pounds; and Messrs. Locke's is more than 47-100 of a pound heavier than any of the 14 New York ram fleeces, with the one exception above. Mr. Hubbard's heaviest ewe fleece is 64-100 of a pound heavier than any of the New York ewe fleeces.

In analyzing the tables showing the product of scoured wool in proportion to time of growth and live weight, we find the greatest weight of wool in a year by one pound of animal, at the New York shearing, to be .083 of a pound. Messrs. Ellis's fleece gives .088, [.086?], Mr. Hubbard's .099, and Mr. Brown's .104, [.106?], or more than one pound of wool to every ten pounds of carcass.

In closing the report, we congratulate the Society upon the result of this, our first, effort in this direction. Comparing the weight of our *scoured* fleeces with those of other societies, shows that the breeders of our town make at least a respectable appearance.

For the New England Farmer.

APPLES IN WESTERN NEW YORK.

During the past ten or twelve years, the apple crop of Western New York has assumed an importance, as a market fruit, that could hardly have been considered possible at any previous time. The section having been settled and cleared up during the last fifty or sixty years, the first orchards set out are still in full vigor. As they were set for family use, with little reference to distant markets, they were not large, averaging, perhaps, two acres.

Fifteen years ago a large share of these orchards were natural fruit. While of the grafted trees many were set to inferior or unproductive varieties, and many to coarse sweet apples for feeding, that have had to be grafted over again. As the demand became more constant, farmers turned their attention to the cultivation and grafting of such kinds as were most called for, and they begun to set out new and larger orchards,—some of from ten to twenty acres. A few of these new orchards have commenced bearing, while many have only been set from one to five years.

The cost of picking, barrelling and taking to market, may range from twenty-five cents to one dollar a barrel; varying with the yield and condition of the fruit, and the distance from market; but probably averaging about fifty cents. On low trees, that hang full of fair fruit, needing little sorting, a good hand will pick and put up from ten to twenty barrels a day. Where the fruit is thin and needs sorting, from five to eight barrels will be a day's work. With a suitable rack, a team will draw from eighteen to twenty barrels of apples at a load. Railroads and canals being convenient, it very seldom, if ever, takes more than one day to go to market; and often several loads are drawn in a day.

Although in some seasons a few hundred barrels of apples could be sold, as long ago as twenty or twenty-five years, it was often the case that the finest kinds could not be sold at any price; but had to be taken for cider, or fed out. Some fifteen years ago there begun to be a regular demand, and the apple trade assumed the proportions of a regular business. At first the price was fifty cents to one dollar a barrel; and once or twice going up to from one dollar twenty-five to one dollar fifty for the apples; the buyer finding the barrel or paying for it, as is always the case here. But during the last ten years, the average prices have largely advanced. The average for the last ten years being from one dollar fifty to two dollars; for the last five years from two dollars fifty to three dollars, and the last two years between four and five dollars a barrel.

The demand for Western New York apples is very large, and widely extended. From a small local demand, to supply the cities and villages here, the market has not only extended to Chicago, St. Louis, and many other places west; to many of the cities and towns in Canada; to Boston, Providence, and most of the other cities in New England; as well as to New York, and vicinity, but a large portion are sent to Philadelphia, Baltimore, and many places in the Southern States, as well as to the West India Islands and Europe. The Southern and foreign export trade is said to be very large, and only limited by the supply. To a very large extent, this is also the case with the home demand. Downing says that American apples are equal if not superior to those of any other part of the world. And in no part of this country are apples grown superior to those of Western New York for productiveness, fairness, and good quality as to flavor and long-keeping. Keeping longer than Western apples, they are wanted in Chicago and other places west for the spring trade. Being earlier and better than Canada apples, a considerable portion goes to the Provinces. The demand in New England is partly governed by the local supplies, and partly by the quality. In New York the demand and price is probably governed by the supply in the country generally, and the demand for export. South, the demand must be governed by the supply and the means to buy with. For, as they cannot raise apples that will keep through the winter and spring, their supplies of this fruit must come from the north. While it is said (American Fruit Culturist page 18) that "large portions of the Eastern continent would gladly become purchasers as soon as sufficient quantities should create facilities for a reasonable supply."

But it is not our best apples only that are wanted. Last fall fifty cents a bushel were paid for culls and inferior fruit, to send to some place near Boston—as I was told—to make cider. And a writer in the *Rural New Yorker* says: "Extensive buildings and cellars have been erected along the eastern portion of the Erie canal, and other places, for manufacturing the best quality of cider. To supply these with apples to manufacture several thousand barrels each, cider apples are bought as high as fifty cents per bushel, along the canals and railroads, and moved one to two hundred miles. The cider is refined and put up in casks and bottles, and sent south and to the cities, and sold at a large profit—such a profit as must increase the number of these establishments."

In regard to the amount of apples grown in Western New York, I am sorry my data is so meagre. But still, with such as I have at hand, approximate results at least may be reached. According to the census of 1850, the value of the orchard products of this State was $1,761,950. In 1860 it was $3,726,380; making an increase of nearly $2,000,000 in ten years. While this includes other orchard fruits, like pears and peaches, the following refers exclusively to apples. Such data as I have been able to collect, being mostly ob-

tained from local papers and dealers, that ascertained the several amounts, partly by finding out the amount sent off by canal and railroad, and partly by dealers comparing notes of purchases and sales in different places—and probably as correct as the census. I say this data renders it very probable that the most if not all of the above increase was realized in some eight counties in Western New York. The amount returned for these counties—$1,566,388—being over 42 per cent. of all produced in the State in 1859. The same data also shows that there has not only been a large average increase over the amount returned by the last United States census, but as the price has largely increased, there has also been a great increase in the amount of money received. As, for instance, it has been pretty reliably ascertained that in 1863 the amount received in Orleans county for apples, was not far from $500,000, the crop being very large and the price averaging nearly two dollars a barrel. While in 1865, when the price went up to five dollars, it was found that some $700,000 was paid to the farmers of this county for apples. In 1863 the Rochester *Democrat* sent reporters to all of the markets in Monroe to ascertain the amount of apples sold in that county. The conclusion reached by this investigation was, that "the entire crop of Monroe county for the past year (1863) has probably reached a value of not less than $1,000,000." As the price has been so much higher for the last two years, there has probably been one or more years, that the value of the apple crop greatly exceeded this amount; but how much I have not been able to ascertain. But enough is known to show that the apple crop of the eight counties referred to, has reached a value at least three times as great as the amount returned by the last United States census; or from four and a half to five millions of dollars a year.

Now this is a greater income and profit from fruit, it is believed, than was ever before realized on the same investment of labor and capital. For the principal part of this great amount, is for fruit grown on the common farm orchards, set and kept for farm use. and with little idea of growing apples for market. Yet in this county, which is small, having only nine towns, the crop of apples must average between $250 and $300 to each farm, while numerous cases might be given where sales range from $500 to $3000 in a single year.

Western New York, 1867. F.

For the New England Farmer.

THE GARDEN FOR SEPTEMBER.

The gardener's labors are constantly varying from February to December; but this succession by no means dispenses with the necessity of labor and watchfulness. You may recollect the story of the result arising from "the want of a pin in the bars"; of equal importance is it that there be no want of a pin to admit of the bars being let down in the garden operations; as a single want, or neglect, may be the means of a failure in some important crop. September work of the garden consists mainly in gathering, storing, or marketing, &c. Much good judgment and energy are called into action in order to enable us to reap maximum profits. Much also may be done toward forwarding another year's crops, in preparation. Considerable of the spring labor with hot beds may be saved by starting many of the plants most in demand in spring, during this month, and pricking them out into cold frames when well started; or they may remain and be covered with leaves, boards, &c., for winter protection. They will thus be found ready to transplant and grow, as soon as the frost leaves the ground in spring, and it is fit for culture. The beds to start such plants in should be made in a warm, moist location, and plenty of moisture may be found almost anywhere this season, so far. They should be well forked over, mixing in a good coat of well rotted manure, and the surface thoroughly fined with the steel rake—no danger of getting it too fine; then sow your seed in drills about six inches apart, if to be covered in with a cold frame; a foot apart, if to remain in the open ground and covered with mulch, &c. If the plants are likely to get large, transplant to check growth; as too much fall growth will tend to cause them to run up to seed in the spring. Cabbage, lettuce, onions, spinach, &c., may be started in this way and be ready for early spring with little trouble.

Beans.—Gather and put in a dry place as fast as they ripen; when well dry, shell and put away in boxes, after spreading and drying. Label those for seed with variety and date of growth. Lima beans not ripe, if picked and dried before frosts, make a very acceptable dish for the table in winter.

Blackberries.—Cut out the old canes and the weaker young shoots, leaving one or two of the strongest for next year's fruiting.

Celery.—Earth up the advancing crop, when dry; being careful to close the leaves together so, that no dirt will get in the centre. Be careful not to cover the centre bud or get any dirt in it.

Cauliflowers.—See that they do not get too far advanced before gathering, as, also, broccoli.

Corn.—The earliest ripe ears should be saved for seed for future use. Braid them up in tresses, by the husks, and hang in an airy, dry place.

Cucumbers.—Pick every day for pickle, and put down in salt in a suitable tub or cask; putting a sprinkling of salt and then a layer of pickles, and so on till full; the pickles will furnish juice sufficient for brine. Properly salted and stored they will keep two or three years, and furnish good pickles, after soaking and freshening; an operation which will re-

store them from their shrunken, withered appearance. Make sweet pickles of the ripened cucumbers not wanted to go to seed.

Grapes.—Unless good attention has been given, they will have mildewed, more or less, from the unusual wet and cold of the season. Gather when fully ripe and preserve for family use, or market; use care in gathering, not to rub or bruise them; preserve the bloom on them to the fullest possible extent, as it adds much to their attractiveness.

Hops.—Gather before frosts, dry and preserve in boxes or barrels for use. It is better to remove them without cutting the vine till fully dry, as the vine will bleed and injure the root for future bearing.

Manure.—Saving and making all that can be turned into usefulness is always in order; too much can hardly be had for profit.

Raspberries.—Cut out the old bearing wood and tie up the young canes; hoe and clean them out thoroughly.

Squash.—Pick and pack away where they will keep dry and safely before frosts touch them. Being a tropical plant, they will not bear even a moderate frost without injury.

Tomatoes.—Make pickles of the green ones, together with peppers, small cucumbers, string beans, nasturtions, &c. A slight protection from the first early frost will continue the vines fresh and in bearing some weeks, frequently. Can and make catsup from the ripe ones.

Continue to gather and save all seeds as they ripen, also all vegetables and fruits as they arrive at perfection. Cut sage and other herbs as needed. W. H. White.

South Windsor, Conn., Aug., 1867.

For the New England Farmer.

ABOUT FLIES.

"Flies, flies, flies, flies!
From pools, and fens, and bogs, and sties,
As in Egypt of old, the swarms arise,
Darkening the windows and clouding the skies,
Covering earth with their dark disguise,
Filling the air with their hungry cries;
In at our mouth and nose and eyes,
Making us mad, however wise,
At the plague of the flies, flies, flies,
Flies, flies, flies, flies!"

So sang the distracted poet, probably some warm September afternoon, when the swarms were peculiarly thick and troublesome. "Where *do* they all come from?" is the thousand times repeated question. Perhaps a brief reply may not be unacceptable.

It was formerly taught that flies "are begotten of dung and of any other filthy matter putrefied by heat in summer time." Many people, even at the present day, believe and write such nonsense, and it would not be surprising if the inquiry should call out sundry letter-writers who will gravely maintain that flies are produced from decaying vegetable and animal matter, and call other people fools for not believing them. The old adage, fully believed now by every scientific man, "*Omne vivum ex ovo*," "*everything* living comes from an egg," is sufficient to refute all such mistaken beliefs. "Spontaneous generation" is a myth, whether with reference to fly-maggots in a dunghill or pollywogs in a mudhole, or oaks upon a prairie. The only thing spontaneous about it is the idea itself, and that, in fact, is hatched from the big egg, Ignorance.

So, whatsoever some may believe or teach, it is certain that wherever there is a maggot, there was an egg, and, before that, a fly to lay the egg. The eggs of the common house fly, however, are always deposited in dung or some other decaying substance, and in that sense it is true that flies come from decaying matter. These eggs are very small, cylindrical in shape, and shining like pearl. If a little decaying wheat be placed in a tumbler in the summer, eggs will generally be deposited upon it, and their curious transformations may very readily be followed.

In about twenty-four hours, varying somewhat according to the weather, the eggs will be hatched, and the little white, footless maggots will appear. Their heads are provided with two small hooks with which they cling to their food, or perhaps tear it in pieces. They live on the filth with which they are surrounded, eat greedily and grow rapidly to the length of a quarter of an inch or more. In about a fortnight the little maggot ceases to eat, its skin becomes brown, and it becomes a pupa, and remains at rest for another two weeks, when, having perfected its changes, it bursts its shell and comes out an active, buzzing fly.

Such is the simple biography of our much-despised *best friend*. For, with our notorious carelessness in regard to decaying refuse, surrounding our houses with filthy cess-pools, and stench-breeding, pestilence-breeding offal, as we do, what would become of us were it not for these myriads of flies and other insects that live in, and devour, such substances, ridding us of the filth that we are not neat enough to rid ourselves of? And if, as Dr. Harris well observes, "these filthy, dung-bred creatures swarm in some houses, covering every article of food by day, and absolutely blackening the walls by night, in others comparatively few are found; for the tidy housekeeper takes care not to leave food of any kind standing about to entice them in, and makes a business of driving out the intruders at least once a day."

Dr. Harris's *fly-poison* may be of service to some readers, inasmuch as it is as certain death to flies as the most approved "fly-papers," and is very simple, and harmless to all human kind, being nothing more than well sweetened *green tea*.

The above, however, is but little of the story of the fly; for take him in all his modes of life, his structure, and the curious adaptation of the various parts of his body to his needs, he is one of the most curious things in nature. The feet are provided with two little hooks,

and between them is a soft cushion covered with hairs, by means of which the fly is enabled to walk up the ceiling, or head downward, or wherever else it pleases. It was formerly thought that this cushion on the foot acted like a sucker, so that when the air was exhausted beneath, the insect was held suspended by the pressure of the air outside. But it was found that the fly could cling as well where there was no air at all; and later investigations have shown that many of the minute hairs with which this cushion is covered, are little tubes, exuding a gummy substance by means of which the fly sticks to the wall or window-pane. The hair feet serve another important purpose also, as all have seen, being used as brushes, in keeping wings, face, and other parts clean.

The general appearance of the tongue is well-known to every one—a short tube or sucker with a fleshy knob or disk at the end. This disk is ridged and covered with hairs, making a sort of rasp of it. It is the rubbing of this that causes the tickling sensation of the fly's bite, and aided by a saliva that it secretes, enables it to devour sugar and other hard substances. In a groove in the tongue are two little sharp bristles, which can be thrust down like a lancet into anything which the fly is eating. In the fly which oftens torments us so during stormy days in summer, these sharp bristles become almost needles in size and strength; and in other insects, as the mosquito, their number is increased to five or six, often with little hooks at the end, which are broken off and left in the wound when the tormentor is suddenly driven away. The irritation from the bites of flies and other insects, is generally, however, produced by a slightly poisonous saliva injected into the bite.

When we consider the enormous number of young that flies produce—some single blow-flies, for instance, depositing 20,000 maggots, which, in twenty-four hours, increase to two hundred times their original size, and in a few days arrive at maturity, each in turn ready to repeat the process—we can readily credit the saying of Linnæus, that "three flies will devour the carcass of a horse as quickly as a lion," and we can appreciate, in some sort, the important position they hold as the scavengers of nature. We are also more readily disposed to believe the accounts of the enormous swarms of flies that have sometimes appeared—covering every part of a vessel at sea and leagues of ocean around, raining down before the wind, as in Lincolnshire, in 1699, "so that people had to turn their backs to them as to a storm of hail;" destroying hundreds of cattle, and even depopulating whole countries, as has happened repeatedly in the Levant.

Some of the whims and superstitions of people in regard to flies, recorded by Cowan,—"Curiosities of Insects,"—are curious enough. The tail of a wolf, buried in a house, will keep out flies. To dream of flies denotes enemies; to dream that they went into one's mouth or nostrils forbodes great sorrow. A multitude of flies denotes a plague. If one fall into the glass, as a person is drinking, great good luck will surely befall the drinker. Flies dying in great numbers in a house betoken the death of some member of the family. If flies bite harder than usual there will be rain (which seems to be true.) Pliny says that flies' heads are a specific for baldness, and Mucanius, who was thrice a consul, used to carry a live fly about with him as a preventive of ophthalmia!

The Philistines and Canaanites worshipped Beelzebub, the god of flies. The ancient Peruvians made sacrifices of flies to the sun. In Scotland a tutelary fly presided one of the fountains, and another large blue-bottle was currently believed to be a witch. Among some of the ancients, punishment was inflicted on criminals by smearing them with honey and exposing them to the stings of flies, till their flesh putrefied and they were eaten up by maggots.

The famous Regiomontanus of Nuremberg, it is said, made an iron fly that would dart out from his hand and, taking a round, return and alight again.. One of the bishops of Naples, however, performed the most remarkable feat we have any account of, for he not only made a brass fly, but he placed it on the gates of the city and trained it so that like a shepherd's dog, it prevented any other fly from entering Naples; so much so, that for eight years the meat exposed for sale in the market, was never once tainted! V.

Dec. 10, 1866.

For the New England Farmer.

THE CROPS ON THE SEABOARD.

Thus far the season has proved most unpropitious for that class of farmers whose farming lies close akin to market gardening.

With the exception of the very earliest of the early varieties of potatoes, the rot prevailed to a degree of fatality that has never been excelled in all our experience, if ever equalled. About all the early crop of Sebec and Orono, (usually, but erroneously, called Jackson Whites,) are gone by the board. Some tracts of several acres in extent, that have received the highest culture possible have been offered in return for a single barrel of sound potatoes. Some farmers with four hands at work, get out eight barrels of sound potatoes after a day's digging, which have brought them from $1.25 to $2 a barrel, after having been carried fifteen miles to market.

The Jackson White, (the true Jackson White is nearly a round potato,) has fared somewhat better than the Sebec, but still is sorely afflicted.

The early Goodrich, though growing side by side with the Sebec, has thus far been but little affected by the rot. Our farmers don't like the early Goodrich, as an early variety, on account of its small size, when compared

with the Sebec, and because, though it is as early as the Sebec, yet it does not attain to market size as early as that very prolific variety. Last season the early Goodrich, grown side by side with the early Sebec, matured about a week earlier, but this season they are full as late as the Sebec, and to those who do not make fair allowance for the early blighting of the Sebecs, *appear* to be even later. The less degree of liability to rot, on the part of the Goodrich, must tell powerfully in their favor.

Onions, carrots, late cabbages, squashes and late cucumbers promise poorly. The maggot has worked much more than usual in the onions this season, so that we shall not have more than two-thirds a crop under present auspices, and should this enemy continue his attack as late as some seasons heretofore, then we cannot have over half a crop. Carrots are generally thin, very few plots being free from many blank spaces.

Previous to the recent heavy rains, late cabbages looked very unpromising,—most of them being covered with the plant louse; but these rains have washed them clean, and with propitious weather I think one-half or two-thirds may rally and give us fair heads.

The squash crop until within a fortnight promised to be as near and not a failure as was ever known; now it looks better and promises to yield from one-third to one-half an average, though there are many tracts that do not now promise a ton to the acre. The long cold and wet spell, bugs innumerable and more persistent in their attacks than I ever knew them to be before, and a bountiful supply of maggots at the roots, have given the poor vines a hard battle of it. Such squashes as have set thus far, make but a slow growth, and promise to be of small size when matured.

The first cut of hay has been remarkably abundant, especially upon upland, and the promise for a good second cut was never better. On the range of meadows back of where I reside, as often as not, three crops of hay are cut annually,—the second and third crops combined, equalling the first,—which is about as much as can be made on the ground. These meadows are usually heavily dressed with rockweed, two years out of three. Apples in town promise better than for several years past.

On the whole, without croaking, our farmers are having a hard year of it.

J. J. H. Gregory.

Marblehead, Mass., Aug., 1867.

Effects of our Climate on Grapes.—The St. Louis Valley *Farmer* comments as follows on this subject:—

The extreme variations in the temperature of the State (Missouri) and throughout the country generally, is an important item, frequently amounting to 70° in twenty-four hours. The rapidly succeeding alternations from heat to cold, frost to thaw, and the intensity of the sun's rays from 12 to 3 P. M., form another great item; and not least (though least observed), we have the awfully drying winds in winter and spring, rendering this one of the most trying climates on the *vital force*, in animal or vegetable, that exists.

In summer, our dry and wet spells—our sudden changes from hot to cold nights—our arid winds and intense suns in July and August—impair or destroy the foliage: and with diseased lungs and digestive apparatus, how can wood, or buds, or fruit be sound, or constitutional vigor be maintained?

From Once a Week.

A MAN-OF-WAR IN THE ACORN.

An oak-tree, wrestling with the wind,
Shook down an acorn where I stood;
I turned aside, I would not crush
That little orphan of the wood.

It was as smooth as the brown egg
That prisons in the nightingale,
By fairy files was notched and barred,
Its cup symmetrical as frail.

In bowls like this, the moonlit dew
Elves gather from the violet flowers,
Or from the hawthorn shake the drops
Remaining from the noonday showers.

A spirit showed me, hid within
The acorn's little dusky shell,
A floating tower, perhaps to ride,
Three centuries hence, on waves that swell

Around the iceberg's sapphire cliffs,
Or the rough Baltic's storm swept strand;
Perhaps to threaten with its fire
Some bastion of the Eastern land.

Yes! see above the bulwarks smile
Frank, sunburnt faces, as the guns
Vomit their thunder-burst of flame—
Those cheers are from old England's sons!

See, down go colors, spars and mast,
Blood-spouting like a dying whale,
The rival ship has struck, and now
The dear old flag flaunts in the gale.

Then once more rings the lusty shout,
And once more rings the stirring cheer,
O'er the dark blue rolling waves,
That smites the proud foeman's heart with fear.

Sail on, brave ships, spread nobler faith,
A truer creed, a wider love;
For on your sails, from opening skies,
Glance rays of glory from above!

Sail on, sail on, ye winged towers!
Far be your angry thunders hurled,
And bear our Heaven-lighted flag
Around a subjugated world.

The vision fades. Now let me plant,
With reverent hand, the acorn seed,
Deep in the kindly English soil,
On which the oak loves best to feed.

May happy summers nurse the bud,
And April's brightest, softest showers,
Widen this germ to nobler life,
And give its limbs a giant's powers!

Rock, but rend not, ye winter storms!
Spare, spare, the helpless little tree;
Earth, nurse it kindly till it float,
Bulwark of Home and Liberty!

For the New England Farmer.

SINGULAR FREAK OF LIGHTNING.

A correspondent sends us the following account of a somewhat wonderful freak of lightning.—

During a thunder shower in Methuen, Mass., in June last, the lightning struck upon three large oak trees on the farm of Mr. Irving Stevens, about forty rods from his house. Mr. Stevens, who was standing near his dwelling, was nearly lifted from his feet and partially stunned. The trees were not much injured. It only broke the twigs on the branches, and took off the bark about a foot square from the trunk of each tree where it passed to the ground, on every one following a seam. It then struck upon a wall by the side of these trees, along which it ran for six or seven rods, scattering the rocks on each side; throwing a rider nearly two rods; making a gap in one place through which a pair of cattle might pass, and plowing a good sized furrow the entire distance. It then passed off at an acute angle, making a smaller furrow for about a rod. But what was marvellous in this occurrence, the lightning in its course broke large rocks in several places into fragments. A large foundation stone, that would require a yoke of cattle to move, was broken into small pieces as though it had been under a hammer. This stone was very hard, being a silicious limestone. It was broken across the grain into irregular pieces. I send you some specimens, which prove very clearly that facts are stranger than fiction.

Here we have a tangible exhibition of the intensity of one of the forces of nature. If, in this instance, it could break the solid rock, we can easily understand how, under other circumstances, nothing in the solid earth could withstand its power. Prof. Agassiz says, the forces of nature that have caused such wonderful formations in the crust of our globe, are the same forces that we find operating now; only they operated in much greater intensity during the periods that preceded the existence of man. As the Creator gradually fitted the earth for man's abode, he confined the giant forces with which it was made, each within its own limits; and so mollified the dispositions of each (so to speak) that mankind could by degrees get the mastery and control of them. Electricity or lightning, heat, light, air, water, steam, the gases and others are all, now, his obedient servants.

We need not go back to nursery tales or the days of mythology to excite our imagination with the deeds of giants and demigods. We live in the days of the giants; and every day makes us more familiar with them. Here is one, who, in a playful mood rends the solid rocks in the twinkling of an eye. The heavens tremble with the roar of his thunder, and man, shocked by his brilliant light, stands dumb, feeling his weakness. And yet, this is a harmless giant, destined to lend his great power and speed for the service of man. He has, as yet, no competitors on the race course; for his speed, of which every one who has heard of a telegraph, has some idea, is even greater than that of light; and completely puts Old Father Time in the shade. But his great strength, is, perhaps, not so generally known to your readers, because not so generally used. Let me give, therefore, a single instance, by way of illustration.

With a small porcelain battery, that could be put into a man's hat, electricity has been produced that has propelled a boat on the Hudson, in the State of New York, with four men in it, and against the current, at the rate of twelve miles an hour. This giant is much stronger than his brother Steam. In fact, there seems to be no measureable limit to his strength. He is also much safer; for, although very quick, he is not subject to such sudden explosions when in service as the other, whose irascible temper, when ill treated, has cost many a valuable life.

There is only one hindrance to this powerful helper lending his aid in all the daily avocations of man. That is the great cost attending the construction of batteries. Those of the kind I have mentioned, require platinum in their structure, a metal that is more costly than gold. Whenever science surmounts this difficulty, we shall have the aid freely, of this most powerful friend. The thunders of his voice reverberate now harmlessly among the clouds, as if he were calling upon men to hasten to make use of his mighty strength.

August 17, 1867. ELDON.

TRANSPLANTING HOP SUCKERS.

Since the missing hills of a large number of the last year's planted hop-yards are destined to be filled with suckers from the remaining hills of the same yard this season, and the time for setting is at hand, for the benefit of the inexperienced, a few hints are herewith suggested.

Those shoots putting forth below the top of the crown, and further down, and in nearly a horizontal course, reaching the surface ten and twenty inches from the main root, are the ones to be selected for planting. The time of planting must not be deferred till the tops of the shoots have reached a growth of more than four or six inches—from one to four inches being the best age. Within this period the tops are in the process of leafing, are pulpy, bulky at the base, and taper symmetrically to the ends; the bodies of the roots portly, juicy, of a healthy whitish color, supplied with a germ of rough fibres on the most fleshy parts near the base of the tops, with a diminutive, shrivelled, rusty appearance at point of juncture with the main roots, denoting but a feeble connective circulation; explaining the fact already learned by experience, *i. e.* that

the suckers within this age are in the best condition for forming self-sustaining roots, and that after having grown twelve to thirty inches, according to the length, the roots become smaller and tougher, less juicy, and more vigorous and thicker at the point of connection with the main roots, the root fibres weaker, the tops leaner and wiry; and accordingly, the plant more nearly approaches the nature of the bearing vines; becomes more dependent on the main plant for support, and proportionately loses its root-germinating powers. From this evident fact will be seen the necessity of transplanting the suckers at their earliest age.

Carefully removed from the main root by cutting or breaking, without bruising, when the tops are not more than one or four inches long, and planted early in a damp time, suckers are superior to seed roots planted in the spring, and with nice care, planted soon enough, will bear half a crop the first season. The older suckers having materially lost the inherent property of establishing a healthy, self-supporting root, when transplanted will grow and often do very well; but will seldom attain a mediocrity, and most generally amount to nothing. Those missing hills that have been filled out with aged suckers, with an idea that the older they are, the better, has proven this fact at a dear cost to the owners of the yards.

In planting, dig, four or five inches deep, two longitudinal holes leading away from the center of the hill, in opposite directions, and put one good plant in each place, with the tops near together at the centre, and roots leading away; and first cover with a tier of fine fresh dirt, and then fill up and press with the feet.—*Dell Pilot, in Prairie Farmer.*

Kelly Island Grapes.—In giving an account of a late visit among the Islands of Lake Erie, the editor of the Ohio *Farmer* found cultivators very anxious as to the grape crop. He says:

Last year we found a light set of fruit, and that little, half destroyed by rot. This year there was a monstrous set of fruit, with but little appearance of disease up to the second week in August; then came a right smart touch of rot. If the disease should make no further progress, there will be left to ripen, as great a burden of fruit as the vines can carry. What discourages and confounds the grape growers in this instance is that the rot should make its appearance, under circumstances hitherto considered the most favorable for a healthy condition of the fruit. If the grape growers could have had the making of the weather, they could not have made it more to their mind, and to have their grapes rot under such circumstances, upsets all their philosophy. The rot is much the worst in the Catawba, but we saw touches of it in the Concord also. The Delaware shows but little sign of the disease.

STONES ON CULTIVATED LANDS.

We have more than once given our *theory* as to the value of stones on cultivated lands. Not only with regard to stones that are so large as to impede the operation of implements used upon the farm, but those, also, which lie broadcast upon the surface, or bedded in profusion just below it. The large and fast ones certainly ought to be sunk, as it is too expensive to travel over or around them, and the small ones are too much in the way of the hoe and scythe. Bury them in the earth. It costs no more to sink the large ones than to get them out, haul away and *fill the holes* which they leave. If small ones are exceedingly numerous, some of them may be used to fill holes where large ones, wanted for walls or building purposes, have been taken away.

Some one may inquire why stones are not needed on intervales or loams, where they are not found? We are not quite certain why they are not needed. Such loams are highly charged with vegetable substances, and in low lands have probably been receiving mineral matter from the wash of the hills for thousands of years. Or, if the loams are on high lands, they are made up from disintegrated rock that contained various minerals—but especially potash—which had been crumbling to pieces for untold ages.

The point is this: is land that abounds with stones benefited or injured by taking most of them away? It is clear to us that it *is* injured,—

1. By lowering the level of the land.

2. Leaving it compact, heavy and inactive, by obstructing the natural drainage of the soil.

3. By taking away a portion of mineral supply to the soil. Geologists and chemists tell us that a *granite* soil will consist chiefly of *silica*, (that is, flint, sand,) *alumina*, (that is, the pure earth of alum,) and *potash;* and in addition to these, a *trap soil*, (that is a soil made up mostly from green-stone,) will contain much lime, magnesia, and oxide of iron, or iron rust. If the variety of trap consist chiefly of *hornblende* (which is itself a combination of silica, magnesia, lime or iron,) as is sometimes the case, the soil formed from it will have nearly 250 pounds each of lime, magnesia and oxide of iron, in every ton of decayed rock!

"When the two minerals, hornblende and felspar are mixed, as they are in the variety of

trap called greenstone, the soil formed from them must be still more favorable to vegetable life. The potash and soda, of which the hornblende is nearly destitute, is abundantly supplied by the felspar; while the hornblende yields lime and magnesia, which are known to exercise a remarkable influence on the progress of vegetation."

These references show the importance of stones to the land where they lie, and they also show why the subsoil, taken from a foot or two below the surface, and used as a top-dressing, often answers a better purpose, even, than rich, nitrogenous manures. It is full of mineral matter, that has been exhausted from the surface soil by a succession of crops. It frequently happens that a top dressing of yellow loam will bring a luxuriant crop, where common manures have failed. We have seen *wheat fields*, dressed with barn manure, where the growth of stem and leaf was very rank, but produced no seed. Had they been dressed with fine gravel, sand, or yellow loam, we have no doubt they would have produced twenty to twenty-five bushels of excellent wheat to the acre.

For the reasons given above, it is best to keep most of the stones that are on or near the surface *in the soil*. If the *subsoil* is not filled with them digging will be easy, so that they can be placed below as cheaply as they can be carted away. Large ones may be sunk whole, or split with wedges or blasted and then sunk.

The article below is to the point, and was published in the *Gentleman's Magazine*, England, as long ago as 1773. It is well worth reading and remembering.

"It has been long known to experienced farmers, that taking away very small stones and flints, is detrimental to plowed lands in general; but more particularly so to thin, light lands, and all lands of a binding nature. It was, however, never imagined that the damage could be so great, as it is now found to be, since unusual quantities of flints and other stones have been repeatedly gathered for the use of turnpike and other roads.

In the parish of Sterenage, in Hertfordshire there is a field known by the name of Chalkdell field, containing about 200 acres; the land in this field was formerly equal, if not superior, to most lands in that county; but lying convenient for the surveyors of the roads, they have picked it so often, and stripped it of the flint and small stones to such a degree, that it is now inferior to lands that were formerly reckoned not much over half its value, acre for acre. Nor is it Chalkdell field alone that has materially suffered in that county by the above mentioned practice; several thousand acres bordering on the turnpike roads from Wellwyn to Baldock, have been so much impoverished, that the loss to the inheritance forever must be computed at a great many thousand pounds.

What puts it beyond a doubt that the prodigious impoverishment of the land is owing to no other cause but picking and carrying away the stones, is, that those lands have generally been most impoverished which have been most often picked; nay, I know a field, part of which was picked, and the other part ploughed up before they had time to pick it, where the part that was picked lost seven or eight parts in ten, of two succeeding crops; and though the whole field was manured and managed in all respects alike, yet the impoverishment was visible where the stones had been picked off, and extended not an inch farther; an incontestible proof of the benefit of the stones."

MARKET GARDENING.

The bright side of this subject has been often presented in city papers, and the envy of country farmers may have been excited sometimes by the big figures which have been used in expressing the income from single acres. In a late number of the Boston *Cultivator* a "Middlesex Farmer" draws a darker picture, by alluding to some of the expenses and uncertainties of the vegetable business. After stating that land which twenty years ago could have been bought for $25 to $100 per acre, now sells for $1000 to $2000, he says, in order to carry on this business with any prospect of success, a young man wants a large capital to start with if he intends to compete with old and experienced growers; some of whom have $50,000 in land, buildings, teams, tools, glass, mats and other coverings for hot-beds, fences, manures, &c.

To illustrate the uncertainty of the business he says:—

When spring is opening, the most anxious thought of the farmer is, What will be the best paying crop this year? One year potatoes pay best, next year a failure; one year squashes pay best, the next a failure; one year cucumbers pay well, next year nothing; one year onions $6 a barrel, next year $1; one year pickles 12½c per 100, the next they go to a high figure. So the farmer is in a *quandary;* he sees his neighbors selling hay at $40 to $50 a ton, and no great trouble or risk to raise it; so he about makes up his mind he will raise hay; while talking about it, the pickle dealers come to him and coax him to raise so many acres of pickles, they promising to advance the price to 14c a 100. Many farmers dread a change in crops, system or help; so they go on in the old track with but little variation. Many of the farmers a few miles farther from Boston contract to raise pickles every year. Last year they, hearing that squash-raisers got $30 to $40 per ton for their squashes the year before, concluded to raise squashes last year;

result: squashes could not be sold for $10 a ton, while pickles were short and prices higher. This year in spite of skill, the squash crop is very small; last year the potato crop paid a good profit; this year disease attacked them before they were grown enough to dig for market, and the disease spread so rapidly that this crop was nearly a failure; many patches did not pay for digging; all the labor put upon the crop is lost; the difference of $8 a barrel last year to $1 or $1.50 this, is a great item to the raiser.

The cost of raising early potatoes and other vegetables has been greatly increased of late by the necessity of sprouting them in manure or hot beds, and then transplanting, as in case of cabbages. The following case is cited.

Last spring a worthy farmer purchased 100 bushels of Chenery potatoes, cost $300; about the same amount for the Sebecs; the land and seed were the best, and all necessary labor was bestowed on the field of about 16 acres. A few days ago a large gang of men were set to digging the potatoes; result of one day's work, one barrel of potatoes, that might rot in 12 hours afterwards. The owner has directed (so reported) to plough in all the crop and sow grass seed. Last year the crop on the same land sold for $1700. In another case, last year, from about the same number of acres, the crop sold for over $2000; this year at the present time it promises as good results.

Fodder Corn.—A large proportion of the farmers of Massachusetts, and many in other parts of New England, cultivate a patch of corn to be fed green to their cows after the pastures begin to fail, as they usually do late in the season. Animals eat it greedily, both when green and when partially dried. What has been the experience of the readers of the Farmer, as to the state in which it should be fed? Many, we know, feed it immediately after cutting; others allow it to become more or less wilted before it is given to them. The editor of the *Utica Herald* advises cutting in the morning after the dew is off, and allowing it to remain till evening, by which time a portion of the large amount of water it contains will have evaporated. When thus fed, he says a better quality of milk is obtained than when fed green.

The Oxides of the Metals.—Observing recently in a meadow the wide diffusion of the oxide of the metal, iron, resulting probably from the decomposition of iron pyrites, and that the water of the brooks was freely used by a large herd of cattle, the thought came up, that of all the metallic oxides that of iron is almost the only harmless one. If the oxides of copper or lead were as widely diffused the result would be most disastrous. The daily absorption into the system of even minute quantities of most of the metals is followed by consequences of a fearful kind. So, too, of the carbonates, and other salts. If carbonate of baryta were as abundant as carbonate of lime, animated life would probably fail before its deadly influence. The wise adjustment of substances with regard to their sanitary influence upon men and animals is a matter which can hardly be overlooked by an observing mind.—*Journal of Chemistry and Pharmacy.*

AMERICAN GRAIN AT THE EXPOSITION.

After the gratifying accounts of honor which American mowers and harvesters reaped at the great World's Fair at Paris, we are somewhat taken down by the result of our show of cereals. We are in the habit of thinking of the western part of the United States as the granary of the world, and of young Chicago as standing high among the grain marts of the world. We also understood from our Western papers that measures had been taken for a creditable display of the productions of the fertile soil in our grain growing States of the Mississippi valley. We are, therefore, a little disappointed by the award of premiums in the grain department of the Paris Exposition, and by the following remarks of the intelligent correspondent of the *Prairie Farmer* upon this part of the exhibition.

In the amount of specimens in this department, which embraces "cereals and other eatables, farinaceous products, with their derivatives," we were as well represented as other nations, though our arrangement for showing them was inferior. Yet this writer says, "were Indian corn and a few samples of wheat out of a great number, especially those from California, excluded, we should have but little left to show the fertility of our soil, or the adaptability of our climate to the production of animal food, or the skill of our farmers as evinced in the tilling of the soil.

Lest some may consider me as doing injustice to our country, continues this writer, let them look at the award of premiums upon collections of cereals, just made. They will find the gold medals distributed as follows; Russia, three; Prussia, five; France, four; Portugal, two; Spain, one; English Colonies, (Australia) one; Duchy of Mecklenburg, one:—none going to the United States. Of the silver

medals, one goes to the United States (California) the rest as follows: Great Britain, one; France, one; Belgium, three; Austria, seven; Spain, three; Italy, four; Chili, one; Egpyt, one; English Colonies, (Canada,) two. Among the bronze medals we figure to the extent of six, while France carries off seventeen; Greece, one; Sweden, two; Italy, seven; English colonies, twenty-four; Belgium, five; Prussia, ten; Turkey, two; Portugal, six; Russia, nine; Sweden, one; Morocco, one; Brazil, one.

Among the Honorable Mentions we find two awarded to the States, while the remainder are distributed in about the same proportion as the silver medals, among other countries.

With the exception of Duryea's preparation of corn, called Maizena, and well known in the States as an article for puddings, &c.,—very nearly the same thing as corn starch, but superior—I think all the higher awards for the preparation of farinaceous matters go to other countries.

Indian corn, is, I find, grown more or less in almost all parts of the world. In few places, however, do the larger varieties approach the products of the Western States. In Australia we have the most successful competitor. Indeed all her cereals are of very fine quality. The valley of the Rhine also contributes quite creditable displays. But for the entire continent, where it grows at all, they must depend upon the smaller varieties of flint corn.

The people here are gradually being educated up to acknowledge the fact that maize may be really a palatable and healthful article for diet. Each year will witness an increase in the demand of our corn for human food, as well as food for beasts. Where grown, it now forms a large share of the food of the peasantry.

In regard to other cereals it is difficult to state from whence come the best specimens. The case of English Pedigree wheat is very fine, the heads being of gigantic size, but it hardly excels in many respects, that from California, while it must be admitted that Southern Illinois and Michigan send most excellent samples. The Surprise Oats of Illinois find competition, successful perhaps, in the New Market Oats, weighing fifty pounds to the bushel, and in the samples from Sweden. The most uniform grain on exhibition is barley. Almost every country presents it, and it is uniformly good. In the French and German departments we find most beautiful samples of beans, in great variety. Much more attention is paid to the cultivation of this crop here than in the States. Of course beans form an important article of diet all over Europe, but one nowhere meets with the "baked beans" of New England. A large, white, kidney bean, called *Haricot*, is to be had at all times at French restaurants, especially in those of second rate character.

From all I can learn, I should judge that rye is every year becoming a less important crop, both in Great Britain and on the continent. The samples I have noticed are in no wise remarkable, either at the exhibition or growing in the fields. It is very certain that the specimens from our own country are not of unexceptionable character. Much of it is but very indifferently cleaned.

For the New England Farmer.

CHEMICAL TERMS.

By the alchemists and earlier chemists, arbitrary terms were applied to the substances which they treated. Nothing was taught respecting their composition or properties, by the names by which they were known. Such terms conveyed no definite meaning to the uninitiated. Indeed, they were often given for the express purpose of concealment. The whole subject of chemistry was then involved in mystery, which has hardly yet been dissipated from the minds of persons who have paid no attention to the subject.

A simple thought which was seized by the French chemists in the latter part of the last century, and made the basis of a system of nomenclature, did much to remove the veil of mystery in which chemistry was involved, and from that time it took its place among the fixed and definite sciences. This thought, which has wrought such a wonderful change in the whole subject, was simply that the name given to any substance should describe its composition. The chemical names now in use do actually describe, so far as is possible, the elements which enter into the composition of the bodies to which they are given. The adoption of this system of naming, introduced a new era into chemical science, and rendered it one of the most delightful and fascinating studies.

Some knowledge of chemistry has now become a necessity to agriculturists. Chemical terms are now found in all treatises upon agricultural subjects, and it is important that all cultivators should know precisely what is meant by these terms. I think, Mr. Editor, it will be useful to your readers who have not had an opportunity to study the elements of chemistry, to give a definition of some of the terms in common use in agricultural papers, books and discussions. Without a clear and definite understanding of the terms used in discussing any subject, we cannot have distinct ideas respecting the subject itself.

As I do not propose to define chemical terms in general, but to confine myself to those which are most commonly used in agricultural works, I shall not attempt any special classification of them, but shall speak of them as they occur to me. Two or three short articles will include all I have to say upon the subject.

I will begin by giving definitions of some of the terms used in chemical operations and manipulations.

ANALYSIS.—This is derived from two Greek words which signify to loosen, to divide, to let

go. By this term is meant the division of compound bodies into the simple substances of which they are compounded. There are two kinds of analysis, the *proximate* and *ultimate*. By proximate analysis is meant the separation of bodies into the more obvious and sensible substances of which they are composed. By the proximate analysis of a plant, it is reduced to woody fibre, sugar, starch, gluten, albumen, oil, resin, coloring matter, &c. These substances are called proximate elements. By the ultimate analysis these proximate elements are reduced to carbon, oxygen, hydrogen, nitrogen, phosphorus, &c. These are called ultimate elements, because the reduction can be carried no farther, and we have reached the simplest or ultimate substances which enter into the composition of the several parts of the plant.

Synthesis is the opposite of Analysis. It is derived from two Greek words which mean to put together. It means to reconstruct by putting together the substances of which a compound body is composed; to re-unite the separated elements in their proper proportions.

Chemical Affinity is that property which disposes bodies to seize upon and unite with each other, forming new bodies entirely distinct from either of them before they were united. It also keeps them united until some substance is presented which has a stronger affinity for one of them than they have for each other. When this happens, a divorce takes place between the substances that had been previously married, and a new union follows, under the influence of this same law of affinity between the new substance presented and one of the others, while the remaining one is left in a widowed condition, and ready for a new union. Thus, if to a solution of sulphate of iron, which is sulphuric acid combined with oxide of iron, you add a quantity of potash, the sulphuric acid, having a stronger affinity for potash than it has for the oxide of iron, will leave the oxide of iron and unite with the potash, forming sulphate of potash, and the oxide of iron will be left in the form of a brown powder, or rust.

Solution.—When a solid body is dissolved in a liquid, so as to become clear and transparent, it is called a solution. In this case, no chemical union takes place, but merely a division of the particles of the solid body, which are diffused in the liquid. The particles are so minutely divided that they are not perceptible by the eye. The change that has taken place is mechanical, not chemical.

Solvent.—Any fluid that will perfectly dissolve a body is called a solvent. Water will dissolve gum, but it will not dissolve resin. Alcohol will dissolve resin, but will not dissolve gum. Water then is a solvent of gum; alcohol is a solvent of resin. In most cases the power of solvents is limited; that is, they will dissolve only a certain proportion. If more is added, it either falls to the bottom or renders the fluid turbid; because the particles are imperfectly divided and merely float about in the solvent.

Precipitation.—If to a solution of any solid another body is added, that causes the particles of the solid to separate from the liquid and fall to the bottom, these particles are said to be precipitated, and the process is called precipitation; and the substance which thus falls to the bottom is called a precipitate.

Concord, Mass., Aug. 25, 1867. R.

For the New England Farmer.

NEED OF BETTER FARMING.

I am not a farmer, and do not presume to instruct members of that most ancient craft. I simply seek for information.

I have seen a field of which one portion produced barely a half a ton of hay to the acre, while another portion yielded three half tons or more per acre. I said to myself, something is wrong here. If that soil is good for three half tons, wherefore is the owner content with one-third that amount? Is it good husbandry or patriotic?

"We have not time to break up the whole piece." Have not time to cultivate your land? Wherefore, then, have you the land? The earth is given for the support of God's creatures, and are you guiltless if simply to be the proud possessor of broad acres, you hold on to that which you cannot use?

"We cannot afford to manure highly and farm thoroughly." Do you really mean to say that skill, intelligence and the use of capital are thrown away in the care of the soil? If so, yours is the only craft of which that can be truly affirmed.

Where is the farmer who can truly say he gives to each and every acre of his farm the attention necessary to develop their best and entire resources? Yet why stop short of that point? I know of one farm, not a bad specimen either, where field after field is scraped over year in and year out at the lowest possible rate of production. The man bought his land and paid for it, and is content with reaping but one-third the proper crop. What would be thought of one who should erect a ten thousand dollar dam across Connecticut River and then occupy the whole with a one-horse shingle shop? You would say it was a foolish operation. Is he wise who avails himself of but one-third the "power" of his farm? Yet I fear there *are* many such. I know farms, which I think could be divided into several parts and each part yield a profit equal to that of the whole, as now carried on.

This whole matter may admit of explanation, which will show that everything is done rightly, but it looks otherwise to me. It seems unpatriotic in this, that land is occupied that is not adequately improved; thereby depriving

the country of a portion of its rightful resources. The owner will neither till the soil himself nor part with a portion to one who will.

I have been told that a certain man used to be obliged to go twice to Boston to market, with his pork, &c. every year; but that now one horse could draw all that the entire district, where he lived, has to spare. Such a state of things tends directly to individual and national impoverishment. I do not like to think that the art of the agriculturist is behind others in this age. I do not believe it is. But there are some things that need reform. You will hear it said that no farmer can make money who hires his work done, or who has a farm so large as to need much hired help. Perhaps he cannot, but he ought to, just as much as in any other department of business. True one who invests a thousand dollars in a farm, and hires all his work done ought not to make more money than men do in other business managed in the same way; yet to say that hired labor is necessarily unprofitable is, or ought to be, incorrect.

It seems to me that our farmers should not be content with half a crop of any sort, when the full one is attainable. If more or better machinery is needed, let it be had, and as cheap as possible, but by all means let our farms be better tilled. A.

New Hampshire, 1867.

For the New England Farmer.

HEDGES FOR RAILROAD FENCES.

In an interesting letter from India, the writer says, that, in many localities, the railroads are fenced with hedges of the Cactus and Prickly Pear. They form an effective barrier against cattle, and are grown so thickly that a bird can scarcely fly through them: and when in bloom their rich and gay colors greatly enhance the beauty of the scenery. As we see these plants tenderly cultivated in green houses or in conservatories, we hardly realize the profusion and luxuriance in which they grow in their native soil, or that they can be made so useful. As the subject of fences is becoming a matter of grave importance in the older States and in the Western upon the open prairies and woodless plains, cannot our railroad companies take a hint from this custom, and seek among the gifts of nature material for live fences, that shall be durable and at the same time ornamental? I wonder why well established companies do so little towards improving the appearance of their roads, when they are so lavish in fitting up passenger cars and in ornamenting locomotives; why the rough banks are not smoothed down, the unsightly places cleared up and some kind of vegetation encouraged to grow to cover the fresh gravel and sand, and keep down the dust. It could not be said such work was done solely for the pleasure and comfort of the travelling public, for it would materially benefit the railroad companies. A thick mat of grass would effectually prevent the washing and gullying of steep banks which continually occur in their unprotected state. The land along the track could not be turned to a better purpose than to producing live fences. There is ample room for double, triple and quadruple rows and even belts of trees. I do not know as this climate will afford such showy and formidable barriers as the tropics. In the South and Southwest, the Cherokee Rose would make a cheap and effective fence. In the Northern States selection can be made from hardier plants, as the Buckthorn, the evergreens,—Hemlock, Spruce, Arbor Vitæ, and White Pine, in double and triple rows, and well trimmed when young, would be pleasing additions to the landscape. Their bright and cheerful green, all the year, would compare favorably with the brilliant Cactus of the tropics. I have seen high and tight board fences erected along the banks of deep cuts to prevent snow from drifting in,—a belt of evergreens would be as effective. The great diversity of soil through which some roads pass, gives an opportunity for a variety of hedges, and avoids the monotony of a single kind. The undulating surfaces, curves and straight lines afford still further opportunities for graceful and pleasing arrangements of varieties, sizes and groups.

I am aware that live fences have fallen somewhat into disfavor. This arises partly from a bad selection of plants, inexperience in their management, and in growing them in gardens that are too small for them to look well or even thrive well without encroaching upon other things more valuable. But these objections would be of no weight with railroad companies, because their land is of no profit, and their hedges would be on a scale to warrant skilful and competent care. All companies are anxious to induce travellers to patronize their particular routes, and can they not offer the additional attraction of having everything about their roads present a neat and finished appearance? Certainly the well-to-do companies can afford something for gratifying the eye, but when an improvement claims both utility and beauty there is a twofold reason for its consideration and adoption.

N. S. T.

Lawrence, Mass., Aug. 20, 1867.

Remarks.—By mentioning "curves" and "undulating surfaces," our correspondent possibly suggests one objection that will be urged against thick side hedges—the obstruction to the view of the track which they would interpose to the engineer. On some lines, considerable labor is annually expended for the removal of bushes, &c., which intercept such view, and serve as hiding places for stray ani-

mals that might suddenly dash upon the track in front of the train. But there is one thing of which abuttors have a right to complain. We allude to the growth on railroad banks of noxious weeds, such as the ox-eye daisy and Canada thistle. We have watched for some years the gradual increase of a plantation of the latter pest in the town of Somerville on the Boston and Lowell railroad, which we think should be abated.

For the New England Farmer.

FODDER CORN AND SUGAR BEETS.

We are indebted to the Secretary of the Irasburg, Vt., Farmers' Club, Z. E. Jameson, Esq., for the following report of the discussion by the members of this society of the relative profit of fodder corn and sugar beets. By sustaining these weekly meetings the farmers of Irasburg are an example which may be safely commended to every neighborhood in New England.

N. H. Stiles remarked that when a farmer steps aside from the regular course of farming, to raise a crop that will increase the amount of food for his cattle, he naturally inquires what is most profitable. Fodder corn is well adapted to summer feeding, and if properly cured would be a great addition to the winter stores; but sugar beets will probably yield a crop of equal or greater value by the acre, require no curing, and can be fed not only in the fall, but all through the winter and spring, when such succulent food proves very beneficial to all kinds of stock. One thousand or fifteen hundred bushels of beets, besides the tops, from an acre, must afford such an amount of food as to give a decided profit.

G. B. Brewster had had no experience with beets, but did not doubt their excellence for winter feed. He believed fodder corn good for cows at all times. He had now fed fodder corn one week, and his twenty-five cows have gained two pails (six or eight gallons) of milk a day, over the amount they gave before, and his cheese are an inch thicker than those made previously to feeding this corn. Without this fodder, the cows would have diminished in milk. Another thing: this food causes the cattle to keep in better condition. He mows a swath about seven feet wide and twenty long, morning and night,—feeding twice a day. As there is a larger increase in the size of his cheese than the extra quantity of milk would lead him to expect, he thinks the quality is improved in a greater ratio than the quantity. Mr. Brewster sowed two bushels of Western dent corn on about half an acre on which he had yarded his cows when milking, and the growth was enormous.

Wm. L. Locke, Jr., said he sowed five pecks of Western corn in drills, and he thought of curing it for winter fodder, as his cows are doing well in their pasture, and he had heard that one-fourth of an acre sowed with Western corn will produce enough to winter a cow.

S. Yaw observed that he had fed corn stalks to cattle with decided benefit.

Z. E. Jameson said that he sowed one and a half bushels of Western corn broadcast on about a third of an acre the 28th day of June, and exhibited a single stalk which weighed one and a fourth pound. He also showed a sugar beet, planted five weeks earlier, which weighed three and a half pounds. A beet occupies about a foot squre of ground, while several stalks of corn grow on a square foot. He had fed his cows just one week with corn stalks, and they have gained three pints each per day in milk, and a pint each in the quantity of cream saved during the week. He thinks it is more work to sow and hoe beets, but less work to harvest and store them safely, than fodder corn.

J. B. Fasset stated that the field of corn owned by Mr. Brewster suited him. He had never raised any himself. The idea of sowing in drills, and hoeing had heretofore rather deterred him, but if it can be sowed broadcast, like oats, and yield such a crop, it must be profitable.

Mr. Brewster feeds out about one square rod a day, and the gain in cheese is perhaps seven pounds, and the gain in condition of the cows must be about a dollar a day, which would be $160 per acre. It is ready for use just at the time when there is usually a scarcity of feed in the pastures. Next year he shall endeavor to have both fodder corn and roots.

Wm. L. Locke, Jr., said he had several times sent to B. K. Bliss, Springfield, Mass., for seed. This year he ordered one-quarter of a pound of Skirving purple rutabaga seed. He thought every seed was good, as there were plants enough for an acre. It was a job to hoe and thin them out. They are doing well now. The land where he planted them did not yield last year over 500 lbs. of hay per acre. He plowed it in the spring and put on the scrapings of the barn-yard, and harrowed it in; then marked the drills with a plow, and scattered in the drills the droppings of the hen roost, of which he had a wagon load. He then covered this manure with a little dirt, and dropped the seed in hills a foot apart.

For the New England Farmer.

FARMING.---THE TRUE POLICY.

Having seen and read numerous agricultural papers, I conclude that they are each and all but different versions of the same subject—Agriculture—being devoted mainly to the details of farming, under various conditions and circumstances. Still, notwithstanding the ben-

efits and satisfaction to be derived from reading agricultural papers, but a small proportion of farmers read them. The condition and circumstances of landholders are so diverse, with respect to nearness to good markets, pecuniary ability, and many other things too numerous to mention, that our farmers will for the future, as they have in times past, do what seemeth right in their own eyes. However desirable smooth and well cultivated fields, highly improved farms, large and abundant crops, choice breeds of horses, cattle, sheep, swine and fowls may be, they are not attainable by all. A considerable amount of land is encumbered by a mortgage, whose owners are cramped for means. Others push forward improvements vigorously, which add little or nothing to the annual income of the land, or to its real market value, while still others divide their time between cultivating their farms and attention to other pursuits.

It is well known that the immediate profits of farming are small, when compared with many other vocations, while it is not subject to the fluctuations, the ups and downs, incident to some other callings. The fact must be admitted that farmers, to meet their numerous family and ether expenses, must obtain considerable money, either by way of revenue from their farms, or some other source.

Political economy teaches that human beings are the subjects of expense during infancy, childhood and youth; and also during the decline of life. Hence, if during the period of health, strength and active labor, sufficient funds are not accumulated to equal the expense of support in infancy and old age, we do not "act well our part," but are a burden to others. A farmer who, while enjoying health and strength and reason, is not accumulating a surplus, is in fact indirectly wasting his estate. We are at all times liable to contingent expenses. Sickness, accidents, and misfortunes may occur at any moment; buildings are constantly going out of repair; implements are wearing out; horses and carriages, as well as all the fixtures of a farm establishment, are continually depreciating in value.

As the country grows older, and the population more dense, the various professions and trades will be compelled to submit to a more severe competition; diminished opportunities will exist for enterprise; poverty, want, and even pauperism, will increase, and farming will have to be conducted in a more skilful and scientific manner. The taxes on real estate must for years, if not for ages, be high, because it has to represent an undue proportion of the valuation of the country, since a vast amount of public and private securities pay no tax whatever. Buying cheap and selling high, however commendable, will avail but little if not conducted discreetly. Some of our largest insolvent debtors were the keenest at a trade.

One of the greatest obstacles to the development of the agricultural resources of the country, is a lack of means on the part of private individuals. This may be imputed to numerous causes, such as shiftlessness, prodigality, unstable habits, vice in its many forms, continuous small and trifling expenses, neglecting to sell surplus produce, accidents, losses and misfortunes beyond human control. Almost every man of mature or advanced age has earned or done business enough, if the avails of it were judiciously disposed of, to make a respectable fortune, or at least a competency. A few facts and figures may not be out of place here. The small sum of twenty cents per week, unnecessarily expended, or in any manner wasted, as for tobacco, for fifty years, say from the age of twenty to seventy, will, at six per cent. compound interest, amount to upwards of $2900. The sum of $25 per annum, or less than fifty cents per week, which is exceeded by many families in the two articles of ardent spirits and tobacco, exeeeds $7250. After having indulged in such needless expense for so long a period, what returns have we therefor? Neither the consciousness of having done right, nor security for the future, nor health, honor or respectability. My distinct meaning is, that however desirable highly improved and well stocked farms, judicious buying and selling, persistent industry, extreme economy, may be on the part of agriculturists,—either or all of these will not fulfil their expectations, if honor, or strict integrity, or a severe morality, are not rigidly adhered to. A. Leavitt.

Chichester. N. H., 1867.

For the New England Farmer.

SWANS, GEESE, &c.

On passing the pond in the Public Garden, I have watched of late, with some anxiety, the white swan which has been sitting quietly in the rustic enclosure near the bridge, hoping to see for the first time the young cygnets. But this morning—August 5th—I noticed that she had abandoned the nest. In company with the obliging superintendent, the eggs, three in number, were examined, and all found to be rotten, with no visible formation in either; showing the great difficulty attending the propagation of the swan in this latitude.

The swan attains to a great age. I was assured by an old gamekeeper that one was kept upwards of one hundred and twenty-five years upon one of the old estates of England. Think of a bird that had been watched by five generations of men! There is a sort of "solitary grandeur" about the swan that belongs to no other bird; and their grace and beauty upon the water has been the theme of all time.

They lay but few eggs—from three to six—and propagate at intervals of from two to ten years, according to age, &c. It will be seen that God has other purposes for these birds than to administer to the physical wants of

man; and that, like the gorgeous birds of the tropics. and the wonderful plants that blossom but once in a century, they constitute in part the poetry of nature.

All birds of their species, such as geese, ducks, &c., in a state of nature, migrate to a northern latitude to propagate. It will be recollected that Dr. Kane found the islands and cliffs of Labrador and those of "Weary Man's Rest," literally swarming with them. Nature teaches them to provide against reptiles, birds and beasts of prey, and hot weather. Those that have watched them on their camping-grounds tells us that they begin to lay their eggs soon after their arrival at the North. They make their nest upon the ground, with no covering but the canopy above. When they begin to sit, the male bird takes his turn at incubation, while the female is off gathering food—thus exhibiting a wonderful instinct, by which the eggs are prevented from getting chilled, where snow and rain are often falling.

"Nature in all things," was Thoreau's motto; and acting upon a suggestion from him, I obtained a most valuable hint in the hatching of domestic fowls.

But, Mr. Editor, I began to write about water birds, and at some future time will give some suggestions concerning the rearing and marketing of domestic poultry. H.

Boston, Aug. 5, 1867.

Remarks.—In the Farmer, Sept. 1, 1866, we gave some account of the swans on the pond in the Public Garden, of Boston, with an illustration of a pair of these graceful birds. To those of our readers who were interested in that article, the foregoing will be acceptable.

TOP-DRESSING MEADOWS.

At a late discussion of the best way and time to top-dress meadows, by the Herkimer County, N. Y., Farmers' Club, the general opinion seemed to be that the best results were obtained by using well rotted dung, applied immediately after haying, using a brush to brush it down fine, so that it may be distributed evenly and reach all the plants. If a sprinkling of plaster be sown immediately upon this top-dressing, it fixes the ammonia and prevents loss. The manure also served to protect the roots of grass from the rays of the sun, which often acted injuriously upon meadows after the grass was cut. Judge Owen made the following statement:—

Some years ago he owned twelve acres of Mohawk flats; it had been severely cropped, and was poor—perhaps the poorest piece of land on the Mohawk. He purchased four hundred loads of stable manure, and applied it in a fresh or raw state, and with but little improvement to the soil or crops. Then he looked about for another course of treatment, and purchased a thousand yards of well rotted dung. It was all in one pile, and had been accumulating for five years. It was at a barn that stood six feet above the surface of the ground, and the manure had been thrown out until the accumulation had reached the sills of the building. Straw had from time to time been thrown upon the excrement of stock, and this had prevent evaporation, making a solid mass of rich manure. This material was carted upon the land, and we saw the effect—it turned the field into a garden. This experience convinced him of the value of rotted over unrotted manures.

CHARCOAL FOR WHEAT.

It is to be hoped that those who are in the habit of cultivating wheat—either spring or winter—will not neglect to give this article a fair, patient, and impartial trial, and note carefully the result.

Charcoal, it is well known, possesses, in a remarkable degree, the power of attracting and fixing ammonia, very considerable quantities of which are always present in rain water, as well as in the snow which falls during winter. It also condenses other nutritive gases which, in their action, are highly beneficial to wheat and other crops. Twenty bushels of finely pulverized charcoal would, in all probability, be an ample allowance for an acre of wheat—that is, so far as the absorption and fixing of these aereform substances are involved; although it would not, of course, of itself, unassisted by putrescent manure, immediately transform poor soil into rich, and cause it to produce an affluent, or even medium crop of grain.

We would by no means advocate the institution of expensive experiments, yet we are sanguine that the time has already arrived when the value of this substance for manurial purposes ought to be thoroughly and accurately ascertained.

As it possesses the power of absorbing ninety times its weight of ammonia—alternately attracting and giving out this most efficient agent of vegetable life—and as this economy is continued uninterruptedly throughout the vegetable year, there can be no question, we think, that its application, in certain given quantities, would, in most instances, be highly economical, and of decided benefit to

the crop. Such as may not feel disposed to enter largely into experiments of this description, from an apprehension of loss or failure, may try it on a small scale,—say on a quarter or an eighth of an acre.

It may not be uninteresting to the reader to see the result, in this connection, of certain organic analyses of wheat made in the laboratory of M. Boussingault. The wheat upon which he experimented, was previously dried at 230 degrees *in vacuo*, and was found to contain,—

Carbon,	46.1
Oxygen,	43.4
Hydrogen,	5.8
Nitrogen,	2.3
Ash,	2.4
Total,	100.0

In charcoal we have a fair representative of carbon, while water is the representative of both oxygen and hydrogen, the two next important elements in wheat.

"Azote, or nitrogen, in the form of ammonia," says a distinguished writer on geoponical science, "or nitric acid, (*aqua fortis*,) and the incombustible part of plants are the elements which least abound in soils, and should, therefore, be husbanded with the greatest care."

If our farmers would give a little more attention to applying what is termed concentrated manures in the cultivation of their lands, we should soon perceive the beneficial results of such a practice, not only in its immediate influence upon the crops, but in its permanent action on the soil. But the fertilizers must be genuine.

Charcoal, for instance, is a substance nearly indestructible. When buried in the earth—no matter what may be the physical character or condition of the latter—it rarely undergoes any perceptible change or alteration for a period of many years. Old coal hearths which have been cropt for generations, are still found to retain their opaque color, and to contain pieces of charcoal, the fractures of which are to all appearance as perfect as when drawn from the kiln.

Charring wood is well known to increase greatly its durability, if charred *after* the wood is seasoned; if before the wood is seasoned, the sap cannot readily escape and the centre of the wood perishes rapidly. If the timber is dry, charring greatly increases its capacity of resisting atmospheric action, whether above or under ground.

Seasoned posts, which have been prepared by charring that portion of them which is exposed to the action of the soil, before "setting," last much longer than the same kind not charred. So that the farmer who applies an adequate dressing of charcoal to his wheat crop this season, may expect to derive important advantages from it as long as he lives. Charcoal is also valuable in the cultivation of fruits, particularly the plum and peach.

Large quantities of charcoal dust may be obtained from various portions of New England, where coal is made for market, or the coal itself may be ground at moderate cost.

FARMERS' CLUBS.

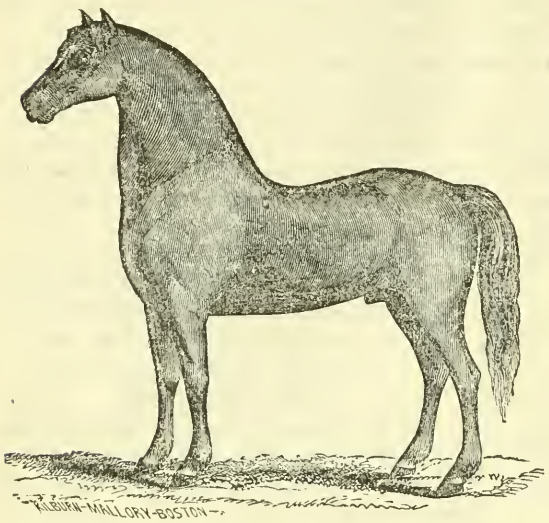
At the *Farmers' Institute*, N. Y., a few days since, Mr. Daniel F. Rogers, of Ill., said,—"It seems to be a question what subjects are proper for discussion at the Farmers' Club meetings. In my opinion, there is no subject of any considerable importance to mankind, a liberal and intelligent discussion of which is not within the proper limits of any farmers' club. Many farmers seem to think that farmers' talk should be only of farm stock—pigs, poultry, plowing and manure.

"There is nothing in the occupation of a farmer that makes it necessary that he should grovel in the dirt; nothing in the occupation of a farmer to *prevent his being an educated man*. Intelligence, with them, should be as free and glowing as the sunshine and air in which we live."

This sentiment elicited warm applause, as it should. The more *practical* knowledge the farmer has—knowledge that can be applied to his business in all its bearings, and that will embrace nearly all the sciences and arts—the more he will enjoy his profession, and the more power he will possess to make that profession profitable in a money point of view, as well as agreeable to his tastes.

It is entirely an error, from beginning to end, to say that the farmer need not be an educated person. No business on earth, it seems to us, needs it more, because *his* business is the source and support of all other business.

—In the Mississippi swamps herds grass has been found which was five feet three inches high, with heads eight inches long. The seed was from forages scattered during the war.



GIFFORD MORGAN COLT.

We present, herewith, the above engraving of the four-year-old Gifford Morgan colt, "Vermont," which received the first premium in its class at the State Fair in Brattleboro', Vt., in September, 1854. He was then owned by J. H. Peters & Co., Bradford, and was claimed to be the most thorough-bred Morgan then living; being a descendant of the old Gifford and Green Mountain Morgans. The distinguishing characteristics of these horses are neatness and compactness of form, hardiness of constitution, soundness of wind and limb, strong digestive organs, enabling them to live on little food, good action, and a high degree of intelligence and spirit.

WOOL GROWING AT THE WEST.

The article entitled "Dark Side of Wool Growing," which we copied a few weeks since from the *Prairie Farmer*, has drawn out several replies from other correspondents of that paper. One farmer in Iowa, whose experience agrees with the writer "A. R. H.," so far as the Merinos are concerned, changed his flock for Cotswolds two years ago, and is much pleased, both as to the production of mutton and wool, with his experiment thus far.

A farmer in Du Page County, Illinois, who still adheres to the "little, nasty, greasy, black Spanish sheep," figures up a very satisfactory income from his flock during the past five years, and says he finds no trouble in selling sheep or wool, and does not know of a man in his section that will be likely to give his sheep away or even sell them at much of a reduction from last year's prices.

And in the last *Prairie Farmer* we have a lengthy response from "Wool Grower" himself, whose "cyphering" and teaching was so severely criticised by the writer of the "Dark Side of Wool Growing." We have not space to print in full "Wool Grower's" replies to the complaints of this writer about his failures in realizing his expectations as to the proportion of lambs raised; to the weight of fleeces; to the number of sheep a farm will carry; to the unfavorable effect of sheep upon pastures; to the price of wool; to the tendency of the flock to degenerate into "culls," &c. But we must copy his reply to the remark by "A. R. H.," "I have got sheep to sell, and so have nine-tenths of the farmers of Illinois:"—

So have I got sheep to sell; I sell my culls every fall and usually a lot of wethers every year. If he means that nine-tenths of the sheep owners in the State wish to sell out of sheep, I beg leave to say that I think him very badly mistaken. No man could buy at any very low price the crop of lambs, or the ewe-flock of any of our long-time flock masters, the class he distinguishes by the epithets "enthusiastic" and "fascinated." I can tell you what the enthusiasm and fascination consist in; they consist in good, large and well-improved farms, growing richer every day, having been "sheeped" until the soil is better than the day the prairie plow rolled the sod over. They consist in good, well-bred flocks of sheep; in good teams, and plenty of farming tools and machinery; in barns, sheds and other outbuildings; in large, comfortably,—and in some cases—luxuriously furnished houses; in books, newspapers and educated children; and last, but not often, in a good big credit account in bank. Who would not be enthusiastic and fascinated on those terms?

Our Shelby county friend takes his skite at our tariff. He shows very plainly by his own language that he knows very well *why* it is not helping the price of wool more at the present time. He knows, in his secret thoughts, that it *is* literally true, that the country has been rammed full of woolen goods. Let him ask any manufacturer here at home, in any of our larger towns, how stands the case with him.

One of our largest manufacturers in Central Illinois said at shearing-time that for the first time in a factory-business of twenty years, he could not pay cash for any wool, but must exchange goods for what he bought. I have known him well for about sixteen years, and I am satisfied that necessity, not policy, brought him to that decision. Added to it, perhaps, was an unwillingness to make the wool-grower as petty offers for his wool, in cash, as his necessities would compel. He said it was the first time he had ever been able to make as many goods as he could sell at home, but was then scattering them around the central part of the State to try to work them off Of course it was in a measure his own fault, or his misfortune, whichever you please, as he, like all manufacturers both Eastern and Western, had doubled his machinery during the last two years of the war. During the same period, importers imported as if there was not a factory in the land. In addition to the large amount of woolens, as affecting the price of wool, we may put down the fact that we wool-growers are now crowding all the large markets of the country with wool, under instructions to sell it "immediately, if not sooner."

A. R. H. says the tariff has not helped the wool-grower the first continental; rather he puts the language into the mouths of free trade Congressmen. I beg to differ with him. I feel that had it not been for the moral force exerted by the mere fact of having such a tariff, we should have seen a panic in wool matters equal to that of 1861, when the first Bull Run battle scared manufacturers so badly that they bought much Western wool at 28 cents per pound. He need not borrow any trouble about that tariff being knocked in the head next winter—not if wool-growers can exert any influence. I think the wool-growers of the country have worked too hard for two or three years past to get this tariff, not to, if necessary, work still harder to keep it.

Before I leave this matter of the tariff, I would like to ask "A. R. H." (inasmuch as he has put some very pointed questions to me) whether he ever gave a dollar or a day's time to help secure the tariff? I discover, that, in a general way, the men who exhibit the most querulousness with regard to the tariff—the men who think it won't do any good—that the manufacturers have got the big end—that they even framed our end of the tariff, &c. &c., are the men who don't come down with "the stamps."

Having reviewed "A. R. H.'s" chapter of disappointments, I would like to address myself for a short time to the whole class of sick, supremely disgusted, four-year-old sheep men —a sort of "application," as the preachers would call it—of the preceding discourse.

My Very Dear Friends:—You all claim to be very sick of sheep. I have no doubt you are, and most possibly with reason; but the trouble is in yourselves and not in the business of wool-growing. Some of you claim to be converts of mine. I have sown much sheep-seed in the last seven or eight years, and I see that in *your* cases it has fallen in stony ground; the stalk, after four year's weakly growth, has withered away, *because* it had not much root. I have always said that not *all* men were called, or fit, to handle sheep; that the business of sheep-raising required plenty of watchfulness, every-day care and hard work. Some of you who took up the shepherd's crook, are Reubens,—unstable as water, ye shall not excel. You are the class which make frequent changes of business,—every change involving a loss. It always so happens that when it rains *your* dishes are not right side up. You could not see any money in sheep until old culls—mere dead sheep—and hard-driven Michigan sheep, sold at from four to six dollars each. I have said to you that you might come out right, even in this case, if you would hang on long enough, *and well enough*, to grow a young flock out of them. But the *hang-on* isn't in you, and as you went into sheep just when they were highest, so you must needs supplement your foolishness by going out of them, when, perhaps, they are lowest. The sicker you grow of the stock, the less care you take of your flock—thus hastening your descent down the broad road that leads to cholera hogs and tew-cent corn. As a heathen poet has expressed it,

"Facile descensus Averni."

I know the present situation looks rough—that wool should be only thirty-five to forty cents per pound, with gold at 140, and with taxes and expenses at fever heat, but, my dear friends, are you going to gain any thing by giving away your sheep? I grant you this is the hardest season wool-growers ever saw, but I say to you that in sixteen years I never saw two hard years for wool-growers come together.

Again, my friends, sick as you now are of sheep, you are very much inclined to view other specialties and pursuits of farming as if surrounded and enveloped with a golden atmosphere. Look at wool-growing; won't the profits of it average, or more than average, with those of other kinds of farming for the past ten, or fifteen, or thirty years? Have you come to feel, in your supreme disgust, that there are no drawbacks to other kinds of agriculture? Have you forgotten that here in Central Illinois men sowed whole counties, almost, in quarter-sections fields of winter wheat from '57 to '62 inclusive, and did not harvest their seed through all those years? Have you forgotten those three years of ten to fifteen cent corn? Have you not known a number of years in the past sixteen when men purchased stock hogs in the fall, fed their crop of corn to them, and sold the pork for less than they gave for the hogs? Have you not known men to feed cattle with the same results?

Have you not known men's entire herds of hogs to die with the cholera, not for one year only, but for two or three in succession? Men and brethren! if you have not seen all these things take place, I have, in the sixteen years I have sojourned in this glorious prairie State.

In conclusion, dear friends, allow me to hope that you will gird on the armor anew, stiffen up the upper lip, pull off the coat and roll up the sleeves, feed well, breed well, take good care of your sheep, so that next year—if our tariff holds its anchor—we all may find ourselves Western Argonauts, safe in the port of Colchis and taking off the golden fleece!

Wool Grower

EXTRACTS AND REPLIES.

WORMS IN HORSES.

Can any of the readers of the Farmer inform me of an effectual method of destroying worms in horses? Some recommend arsenic, but is this not too deadly for any living creature to swallow?

West Mansfield, Mass., 1867. A Reader.

Remarks.—This trouble, to which horses are quite often subjected, is frequently a serious one, and spoils the usefulness of the animal. It also causes him great annoyance, makes him weak, and gives him a shabby and discreditable appearance. In a majority of cases these troubles are occasioned by the parsimony, or at least by the injudicious treatment of the owner.

In the first place, the animal probably *begins* life with a hereditary taint, and this is aggravated by neglect, abuse, overworking, and a scanty supply of miserable fodder.

When the worms are of the tænia, or tape-worm kind, competent veterinary skill should at once be called in, and active measures pursued, until the terrible plague is destroyed. It will be only additional suffering to the poor animal for inexperienced persons to practice upon it.

When the worms are the small, white, tapering kind, which are often voided with the excrements, and are called *ascarides*, they may be dealt with by most persons owning horses, and usually with success, by the employment of remedies that are simple and always at hand. The first of these should be moderate labor and generous feeding, and, instead of dry hay all the time, feed that is cut and moistened, or a mash of bran, ground oats, barley, or corn meal, with cut hay.

The presence of these little tormentors may be known by the appearance and actions of the animal: the breath is sometimes fetid; the hair becomes dull and frowzy; the animal sometimes rubs its nose against any object near it, or strains it upwards, and the eyes are unnaturally bright. The appetite, too, instead of failing, becomes more than good.

On examination of the parts around the anus, little white strips of tenacious mucus may be seen, which are occasioned by the worm, when voided, not falling directly to the ground with the excrement, but adhering to the skin and sliding along down, and leaving this whitish track where it passed.

When these evidences are apparent, a gill of sifted *wood-ashes*, mixed with the cut feed, and administered every other day for a week, will usually effect a cure. If it fails, give two drachms of *tartarized antimony*, in a mash, every morning, until the worms are expelled.

But it should always be remembered that the health and efficiency of the horse depends upon his being moderately worked and generously and regularly fed.

OX KILLED BY EATING WILTED CHERRY LEAVES.

I would like to know through the Farmer, if any one can tell, what was the matter with an ox which one of my neighbors lost last week. The symptoms of illness were first noticed in his eyes, which discharged a watery substance, as they do when they have been hurt. The next day they turned a bluish white, and the ox was entirely blind, and appeared to be in great pain, and did not eat. His mouth began to swell and corrupt, with an offensive smell. He grew worse for seven days, and then died. He was a nice, seven years old, fat ox, and had never worked hard. His jaws were set the third day after he was taken. The day before he was taken he ate some black cherry sprouts that had been mowed for hay. Some people think that the cause of his sickness and death.

Gilsum, N. H., Aug. 19, 1867. N. O. H.

Remarks.—In the Monthly Farmer for October, 1852, we published the statement of a farmer in Plymouth County, Mass., that he had known three cows killed in one day by eating the wilted leaves of a wild cherry tree that had been blown down in the pasture; also an account of the injurious effect on the milk of cows from browsing the green leaves of the cherry, which overhung the wall of the pasture.

In the August number, 1855, there is a statement of the death of a fine calf in Bolton, Mass., that was tethered under a cherry tree, and remained healthy and thrifty until, in picking the fruit, some of the twigs were broken off and fell to the ground. After which the calf sickened, became blind, and died, although two doses of lamp oil and several injections were administered.

In a late number of the Boston *Weekly Advertiser*, Mr. H. C. Merriam gave the particulars of the poisoning of a premium steer by eating a few wilted leaves attached to cherry trees or logs brought into his yard for firewood, and said he had known of several deaths from the same cause. He thought cherry trees on the farm should be as carefully watched and cautiously managed as arsenic in the house. Cattle eat them very greedily if they can get at them.

Cold water administered externally, or in the form of a bath, is recommended as a cure for prussic acid, which poison the cherry leaves are supposed to contain. When an animal has been poisoned in this way, cold water should be dashed over its body by bucketfuls, from the pump or well.

STIFLED HORSES.

Please inform me, if you can, what will cure a horse that is stifled, and oblige, L. J. Day.
Bristol, Vt., Aug. 23, 1867.

Remarks.—The stifle joint in the horse answers to the knee in man, and the "patella" to the knee-pan. This bone in the horse, as in man, is liable to be misplaced, in which case, it must be "reduced" or set. We presume that with Mr. Day's horse the trouble is a mere sprain, to which this joint is liable from violent exertion or sudden slip, or from injury from the kick of another horse, or from coming in contact with some hard substance. In these cases, says Mr. Youatt, there will generally be sufficient heat, tenderness and swelling on the part to point out the seat of injury. The animal will also step short on the affected limb, being unable to extend it. The treatment should consist in resting the animal, applying warm fomentations to the part, and administering a dose of physic. If the inflammation runs very high, it may be further relieved by bleeding from the femoral vein,—the principal artery of the thigh. When the acute symptoms have subsided, a blister may be applied to the part. In relation to fomentations the same writer observes that the effect depends on the *warmth* of the water instead of the wormwood, vinegar, tobacco, urine, juniper berries, camomile flowers, &c., which may be steeped or added to it. Fomentations are therefore seldom continued long enough. They should be applied by means of flannel several times folded, and wrung dry, with the heat as great as the hands will bear, and when removed the part should not be left wet. Mr. Allen says that half an hour should be devoted to the operation,—the water being kept warm by the addition occasionally of that boiling hot.

ANOTHER LADY WHEAT GROWER.

I was pleased to see an article on Wheat Raising in last week's Farmer by a sister farmer; but was sorry she did not tell how much she raised. I raised six bushels this year; both the grain and straw very fine. Another year I shall raise more. Will you please ask, through your paper, if any one in this vicinity has used the cow milking machine; if so, with what success? I have gained much information by reading the Farmer, and found many of its receipts very useful. M. A. C.
Dorchester, Mass., Aug. 23, 1867.

Remarks.—In the early settlement of New England our farmers raised wheat in abundance. And it always affords us pleasure to publish statements which show that our soil has not "forgot its cunning" in this respect. But when ladies send us the details of their successes in cultivating this staple, we accept it as evidence of another fact,—one more encouraging perhaps than the demonstration of the possibility of growing wheat on our old farms,—the fact of a growing interest in the great subject of agriculture on the part of Miss and Mrs. Young America. Our countrymen who travel in the rural districts of England, especially those in search of information on agricultural subjects, often speak of the interest manifested by the ladies in everything pertaining to the farm; of the intelligent manner in which they converse upon all agricultural subjects, and of the readiness and familiar manner with which they exhibit to strangers, in the absence of the proprietor himself, everything of interest about the estate, whether pertaining to stock, the dairy, field crops, drainage, or general farm management.

When factory and shop life for girls, and village and city life for mothers are better understood, we are confident that the farm home and its interests will be better appreciated by females. We hope, therefore, that the wheat raising communications of these two Massachusetts ladies is evidence of a "change in the fashions" that is much needed, and that other women will adopt the same *style* of influence and the same *cut* of practice.

Will some correspondent reply to the inquiry about the cow-milker?

AN OLD SUBSCRIBER AND A QUEER FELLOW.

Please find $2.50 to pay for the Farmer another year.

There cannot be a pole bean found in '67, but what climbs the pole against the sun. This is the town where the white huckleberries grow, and where the town fails to raise money enough to keep the public school six months, as the law requires.

Rain and rotten potatoes plenty. I was one of the first subscribers for the *Saturday Rambler*, 22 years ago. Horace Lawton.
Mansfield, Mass., Aug., 1867.

Remarks.—Twenty-two years ago, and his cash has come as regularly as the months themselves. If all his townsmen had done the same thing, there cannot be a doubt but the public school would have been continued twelve months in the year, with a suitable vacation only for Thanksgiving, and for picking the *white* huckleberries! But the pole beans—the incorrigible beans, that insist upon running *against* the sun, instead of an easy climb along with it. Bless us. What a town *Mans*-field must be. We wish all its people were like our correspondent in one respect, at least, then Mansfield would blossom as the rose, the huckleberries be sweet, if not black, and the schoolmaster and schoolmistress find ample opportunity for labor all the year. We must go and see Mansfield.

SPECIMENS OF WHEAT.

Enclosed is a specimen of spring wheat, raised by us the present season. The specimen is some that shelled out while being drawn from the field. We think it is a desirable quality, as it can be grown in this valley, where wheat raising has become nearly obsolete. Notwithstanding the heavy rain through Friday and Saturday, and the large growth of straw, the wheat was cut with a cradle, on Monday, without any inconvenience from being lodged. R. Burnham & Son.
South Strafford, Vt., Aug. 26, 1867.

Remarks.—Large, plump and handsome berries. We have also received a specimen of wheat grown by Mr. S. Pratt, of Chelsea, Mass., within sight of

the steeple of the "Boston Meeting-house;" but as we have the promise of a statement of the crop, which is a good one, after threshing, we will now merely remind the wheat-raisers in other parts of New England that they may look out for a "grist" from the tide-water farmers of the old Bay State.

TURKEY DISEASE.

Can any one tell me, through the FARMER, what it is that causes young turkeys, from two to three months old, to lose their appetite, droop about for a day or two, and then die. I have a flock of turkeys that went along well until two months old, but since that they die off every few days; can any one inform me what is the cause, and if there is any remedy, what it is? G. E. H.

Shrewsbury, Mass., Aug. 26, 1867.

REMARKS.—In connection with the foregoing inquiry, we take much pleasure in publishing the following interesting communication from a correspondent in Illinois. Although the flesh of fowls is heir to a great variety of ills, it is possible that the prescription of Mr. Whatmore for chicken disease, may prove efficacious for the sick turkeys.

CHICKEN DISEASE.

Having lost several hundred chickens by the complaint which for two years has been making sad inroads amongst the poultry in this part of the country, I have studied the disease by opening a great many. I have examined the throat, craw, liver, gall, heart and gizzard, and invariably found them healthy, and of good color; but the guts were always cramped and contracted, and hard, like a piece of English whip-cord, or the fourth string of a fiddle. I therefore conclude that the disease is a kind of fever. After trying a great many remedies, I made a *strong* decoction of white oak and hazlenut leaves, boiling them together in a large iron pot. When cold, this is put in pans for the chickens to drink, adding to it a little asafœtida and black pepper, prepared by putting ten cents' worth of asafœtida into a two-quart bottle, and *filling* up the bottle with water in which a good supply of ground black pepper has been boiled. After putting a little of this into each pan, it should be well stirred with a stick. Whenever a chicken, young or old, sickens, I pour down its throat about a teaspoonful of the asafœtida, one or two days. The chickens wont drink the decoction if they can get other water, which must be kept from them. Since I have used the decoction my dead chickens wont average three a week; while before I buried eight and ten in one day. Any person wishing further information can have it by sending a ready directed envelope, stamped, with paper, for a reply. Address

JOHN WHATMORE.

Bridgnorth Farm,
Dunleith, Ill., Aug. 26, 1867.

A CLAY SOIL BENEFITED BY SAND.

I have just read in the FARMER, an account of the results of applying clay to sandy soil. In the fall of 1865, I had occasion to make some ditches in a low, sandy soil, on the bank of a river, which overflows every spring. I spread the sand from these ditches on a white clay meadow, ten loads to the acre. It unfortunately froze up in piles, so that I could not spread it until spring. The grass started early on the edges of the heaps, but for the year 1866 I did not perceive much benefit. This year, however, the grass started early, grew luxuriantly, and produced twice as much as adjoining land, where it was not applied. After it was cut, and until the present time, there is a large increase of the second crop. The land contains a large percentage of mica, which is known to be rich in potash. H. A. SHELDON.

Middlebury, Vt., Aug. 22, 1867.

SUPERPHOSPHATE ON NEW AND OLD LAND.

Why does plaster and superphosphate show more marked effects on what we term broken-up ground than on old ground, or ground that has been cropped one year? If superphosphate is a manure, why do we not realize the same benefit on both? Who can tell? W. B. WEEKS.

Gilford, N. H., Aug. 26, 1867.

REMARKS.—Is it a fact that superphosphate *does* show "more marked effects" on new land than on old? Such has not been our experience. Would not the same result be noticed on such lands from the use of common manure? The new ground has elements of production of which the old has been partially exhausted, and it is probably the influence of those elements that gives the crops on the new ground their better appearance.

Superphosphate is certainly a manure. Anything is a manure that causes plants to grow, which makes land productive, although it may do it indirectly, by stimulating other substances into action. Plowing, hoeing, and stirring the land in any way, is manuring, in one sense. To cultivate by manual labor is to manure, because it develops by culture.

APPLICATION OF MANURE—WINTER WHEAT—SPRING WHEAT.

I take a great interest in reading the FARMER, and particularly the column of "*Extracts and Replies.*" I wish to ask you or some of your correspondents, which is the best time to get out manure?—to get it out green in the spring and plow or harrow it in, or do as I have been in the habit of doing for a few years past, which is as follows:—

Let the winter's stock remain in the cellar until I dig my potatoes, then draw out and plow in as soon as convenient. The next spring plow again and plant corn. Manure in the hole with hen manure and night soil, well mixed with muck or loam. I bed my cattle and horses well with pasture brakes, then tie the cows up all summer and bed with muck. Hogs run on the manure and keep it down. By the time I draw it out it gets well rotted and smells as though it would make a good crop of corn, which I hardly ever fail of getting.

Should I be likely to get a good crop of winter wheat by plowing in a good second crop of clover now, and sowing after a few days,—the land gave spring wheat last year,—or had I better grow grass another year?

After reading your article on green manuring, a few weeks since, I was led to make this inquiry. We get very good wheat by plowing in the fall and harrowing, then sow as soon as the frost is out in the spring without plowing. By answering the above questions you will oblige a young farmer and perhaps many others. S. S.

Laconia N. H., Aug. 26, 1867.

REMARKS.—The practice of applying manure which you describe is a good one. In the first place, if the manure is kept in a compact form in the cellar, and is covered with peat or loam, it suffers no special loss, and in that condition is

thoroughly ripened, and would be fit for use in the spring on any crop.

But if the summer manure was plowed under in the fall, in its crude state, it would pass through the process of fermentation and decomposition *in the soil*, where it would have an excellent influence in lightening and enriching it. There is no other way, we think, in which manure can be so judiciously applied as in this; where there is so little loss, and where the manure is so soon removed out of the way to the places where it is to be used. We should adopt this practice as a rule, wherever manure is to be used on hoed crops. Apply *crude* manure in November to the garden, for instance, plowing it in just deep enough to cover it with two or three inches of the soil, and on plowing the same piece in the spring, the soil will be found almost black—if the dressing was liberal—and so light and porous that the tenderest roots of plants may roam in it in search of food with the greatest ease. Such a soil will remain light for a long time, will resist a drought bravely, and will always be easy to work as long as it remains in this condition.

Your plan is liable to no serious objection, yet we should prefer to have the winter's stock of manure in the ground, and ferment there, than to have it remain in the cellar through the summer.

Your practice of the use of hen manure and of bedding the stock, is excellent.

With regard to the wheat, we are inclined to think that it would be better to allow the land to lay in grass another year, than to follow a wheat crop with wheat.

Your practice and your questions, both indicate that you are determined to be a *progressive farmer*, and one who means to make the soil remunerate him abundantly for all the skill and labor bestowed upon it. We wish you great success in the noble calling, and shall find pleasure in being useful to you in your efforts.

WEB-WORMS, OR FALL CATERPILLARS.

Can you inform me what sort of a pest is at work on the apple trees? It is about an inch long, and spins a web not unlike a spider's. The leaves within the web look as if they had been scorched. The *critter* looks something like the tent caterpillar, the color being similar, but it is not half as large. A. W. GREELEY.

Nashua, N. H., Aug. 14, 1867.

REMARKS.—This is undoubtedly the insect that is known in this section as the Fall Web-worm, or Fall Caterpillar. They are very troublesome upon shrubs and trees during the summer and fall. They are named from their habit of feeding together in large numbers, and spinning a web that envelops the leaves and the whole branch, as they devour the foliage. The NEW ENGLAND FARMER has the honor of publishing the first description of this species, Aug. 22, 1828, written by the late Prof. T. W. Harris. He then said it belongs to the genus *Arctia*, and the species had not, to his knowledge, been described. From its habit of *weaving* he called it *Hyphantria* (a Greek name for weaver) *textor*. He says, the eggs, from two to three hundred in number, are deposited on the under side of a leaf, near the end of a twig, which hatch at different times in July and August. The young caterpillars begin to provide a shelter for themselves, by covering the upper side of the leaf with a web, which is the result of the united labors of the whole brood. They feed in company beneath this web, devouring only the upper skin and pulpy portion of the leaf, leaving the veins and lower skin of the leaf untouched. As they increase in size they enlarge their web, carrying it over the next lower leaves, all the upper and pulpy parts of which are eaten in the same way, and thus they continue to work downwards, till finally the web covers a large portion of the branch, with its dry, brown and filmy foliage, reduced to this unseemly condition by these little spoilers. These caterpillars, when fully grown, measure rather more than one inch in length; their bodies are slender, and very thinly clothed with hairs of a greyish color, intermingled with a few which are black. The general color of the body is greenish yellow, dotted with black; there is a broad blackish stripe along the top of the back, and a bright yellow stripe on each side. Towards the end of August and during the month of September, they leave the trees, disperse and wander about, eating such plants as happen to lie in their course, till they have found suitable places of shelter and concealment, where they make their thin and almost transparent cocoons, composed of a slight web of silk, intermingled with a few hairs. They remain in the cocoons, in the chrysalis state, through the winter, and are transformed to moths in the months of June and July. These moths are white, and without spots; the fore thighs are tawny yellow, and the feet blackish. Their wings expand from one inch and a quarter to one inch and three-eighths. As soon as the webs begin to appear, the leaves should be stripped from the branches, with all the caterpillars, or the branches cut off entirely, and the worms crushed under foot.

TWO YEAR OLD SQUASHES.

I noticed in a late number of the FARMER, that an Essex, Vt., correspondent has a pumpkin that was grown in 1866. I have two winter squashes that I raised in 1865, that are as sound as when taken from the vine. The largest one weighed, when picked, 37½ lbs. Its present weight is about 35 lbs. CAPT. JOEL PARKER.

Northfield, Vt., Aug., 1867.

FAST COLT.

The same dam that has had three remarkable colts during the three last years, dropped another stud colt June 12, 1867, which measured 37½ inches in height, and as I could lift him easily, I judge he then weighed about 150 lbs. August 12, he weighed 356 lbs., and measured 46½ inches; Aug. 19, 374 lbs; Aug. 26, 396 lbs., and measured 48 in., or 12 hands high. From this it seems he has gained an average of about 3 lbs. 4 oz. in weight, and one-eighth of an inch in height *per day!!* He is withal

as "handsome as a picture," and as full of "thunder and lightning" as old "Bucephalus." If any of your readers have a *faster* colt, I will make him my best *bow* if he will meet me at the Vermont State Fair. RANDOLPH COLT, JR.

Randolph, Vt., Aug. 28, 1867.

AGRICULTURAL ITEMS.

—The California Agricultural College is to be located at Oakland, Alameda county.

—A machine, propelled by horse power like a reaper, has been invented in Iowa to gather and crush the potato bugs.

—The Chicago cattle yards have 150 acres floored with plank. There are pens for 75,000 cattle, 20,000 sheep, and 20,000 hogs.

—He is the most reasonable worker who judiciously divides the responsibilities and duties of life between brain and muscle.

—With the mercury at 90 deg., a farmer in Fulton, Wis., recently cut thirty-two acres of wheat in one day with a Clow reaper and one pair of horses.

—Canadian farmers who have settled in Iowa, say that they can raise combing wool as cheap there as in Canada.

—Rancid or strong lard can be much improved by heating and frying in it some sliced potatoes, and then keeping it in a cool place.

—J. Harris, Rochester, N. Y., thinks a bushel of wheat cannot be grown in that vicinity, with due regard to the interests of the land owner and the laborer, for less than $1.50.

—In 1857 the duty on pig lead was reduced from 20 to 15 per cent., and under the present tariff it is two cents a pound. The production of the Galena mines has largely decreased of late years.

The *Rural New Yorker* speaks well of the Diehl wheat. It has seen some heads with over eighty kernels in each. Two New York farmers last year harvested 300 bushels from ten acres, and this year's crop was more promising.

—The editor of the Amherst, N. H., *Farmers' Cabinet* has an apple tree upon which are now growing several bushels of Porter apples, several winter squashes, and a printer's dish of butter beans!

—Mowing machines are not very generally used in England, and the chief obstacle to their introduction has been the landlord's dread of the destruction of game, as the machines show no mercy to sitting pheasants and partridges.

—Forty acres of bog land in the county of Mayo, the north-west extremity of Ireland, undermined by heavy rains after long continued drought, lately disappeared in the depths of the Atlantic. Ten acres of standing crops and several houses were destroyed.

—The practice of sowing rye early in autumn among corn, for fall and spring feed, and for plowing under, is adopted to a considerable extent by the farmers of the West. The corn is benefited by the stirring of the soil necessary to cover the rye.

In England the dog tax yields a good sum. Up to the end of June last, licenses were taken out for 695,624 dogs, against 394,837 on which the tax was paid in the year ending March, 1866. In Scotland the number of dogs taxed has increased from 36,365, to 80,000.

—A. P. Scott, of Newton, Ind., gathered a bundle of grass in the field, carried it forty rods and laid it in the wagon for the horse to eat. In a short time there was trouble with the horse, and looking up the matter, a large rattlesnake was found in the hay.

—To "break up" a sitting hen, I. A. Collins, of Cardington, Ohio, ties her with a string four or five feet in length to a stake driven in the ground, close to the path where he is in the habit of passing frequently, and scares her as often as he goes that way. One day effects a cure.

—A correspondent of the Canadian *Farmer* says that in the county of Norfolk, Can., turnip culture is declining. Maize is raised extensively; it is considered less expensive and more certain than turnips, carrots or mangels and is used extensively in feeding.

—A man near Ann Arbor, Mich., recently left a fine horse fastened to a small tree on the edge of a ditch containing a little water, and on returning he found that the halter had slipped down, drawing the horse's nostrils into the water, and holding him there until he was drowned.

—The great Canada cheese, which was exhibited at the New York State Fair, at Saratoga, weighing 7000 lbs., has recently been tested, and found to be uniform in color and excellent in texture, with a sharp flavor, resembling the "brandy-cheese" so popular with many.

—An Illinois farmer, in a note to the New York Farmers' Club, says he has never known a case of the dreaded milk sickness, where the animals had plenty of pure water. He also says that since he hauled sand and gravel on his walks and paths the chicken cholera has entirely disappeared from his place.

—The cost of keeping sheep in the South is very small. A correspondent of the *Agricultural Department*, from Union Co., S. C., says it cost him but 28½ cents per head to winter his flock of 22. They were fed about two months, receiving shelter not more than two weeks. He estimates his profits from the flock, at $40.

—The Ohio *Farmer* says that corns in horses' feet are the cause, in most cases, of sprung knees. In order to relieve the heels sore with corns, the animal throws his weight mainly on the toe, thus relaxing the tendons and suspensory ligament of the leg, contraction of which naturally follows. Corns are mainly produced by improper shoeing, which contracts the heel. Instead of bevelling

from without inward, making the foot to rest in a concavity, which resists the natural expansion of the hoof and forces the heel inward, the shoe should be made level.

—A sycamore tree in Mississippi Co., Missouri, has a trunk forty-three feet in circumference; another in Howard county is thirty-eight and a half feet in circumference. A cypress in Cape Girardeau county is twenty-nine feet in circumference, and a black walnut in Benton county is nearly eight feet through.

—The process of butter making, says the *Scientific American*, depends mainly upon physical action. The butter is formed in the cream, and the effect of the churning is simply to bring the isolated particles into one mass. A high temperature favors the process of softening the globules of butter and rendering them more adhesive.

—The editor of the Woodstock, Can., *Patriot* makes merry over the mistake of an old Shanghae hen of his that has been sitting for five weeks upon two round stones and a piece of brick. "Her anxiety," he says, "is no greater than ours to know what she will hatch. If it proves a brick yard, that hen is not for sale."

—In describing the farm of W. H. Mann & Bro., in McLean County, Ill., of a little over one thousand acres, the *Prairie Farmer* mentions a "patch" of Osage Orange plants for hedges of 250 acres in one body, in rows two feet apart; one hundred acres in corn and two hundred and fifty in wheat and oats. Only two years ago the whole was a wild prairie!

—While a Mr. Rice was eating cherries on his farm, near Fredericksburg, Ind., and viewing the working of his bees, one of the bees stung him on the upper lip, when he immediately started for the house, calling to his mother for some remedy, laughingly remarking that a bee had stung him. The remedy was applied, but in half an hour the man was speechless, and soon after was a corpse.

—The Sacramento *Bee* asserts that in the Alameda and Santa Clara valleys the farmers have actually been driven by ground squirrels from some of their best lands; that their settlements, like those of the prairie-dog extend for miles, each burrow sheltering from one to six inmates; and that it would hardly be an exaggeration to say that they eat one-fourth of the annual wheat crop.

—A few weeks since we copied a statement made by a correspondent of the *Prairie Farmer* that walking cultivators were taking the place of the wheeled or riding ones, in the corn growing regions of Illinois. This we see is very positively denied by other correspondents, who say the wheeled cultivators are becoming more and more popular with farmers generally.

—A correspondent of the *Mirror and Farmer*, who has been down South, says, that during the war large quantities of cotton were hauled by ox teams from Texas to Mexico. Both Texan and Spanish teamsters were employed. The Spanish oxen were yoked by the head; the Texan by the neck, or in our usual style. Working thus together the superiority of the head gear was so manifest, that it was generally adopted by the American teamsters. He wishes that a few yoke of steers might be trained to "walk Spanish," and be exhibited at our Fairs.

—A correspondent of the *Western Rural* in Franklin County, Mo., mentions some fields of corn, in which the stalks were prostrated to the ground as if a storm had levelled them. On examination, there was found at the root of the stalk a little white worm, half an inch long, with a whitish brown head—not the cut worm—but such as harbor in logs cut in summer time. Quite an amount of damage seems to have been done by them.

—The Boston *Journal of Chemistry*, edited by Dr. J. R. Nichols, and published monthly at fifty cents a year, says that when a person is mortally bitten by the *cobra*, molecules of living germinal matter are thrown into the blood, and so rapidly multiply that in a few hours millions upon millions are produced. Chemical action is interfered with, combustion is extinguished; coldness, sleepiness, insensibility, slow breathing, and death follow. How mysterious is the influence of *poison!*

—The editor of the Ohio *Farmer*, having visited Mr. W. A. Flander's Apiarian Institute on Kelley's Island, in Lake Erie, writes as follows: Talk of big prices for merino rams! Flanders can get more money for an Italian queen bee, with three rings around her tail, than any ram peddler can get for the best Vermont Merino in his flock. Bugs is ris! A little insect not so big as a tooth-pick, worth more money than a Shorthorn bull! The idea would be ridiculous if it was not true.

—The Columbus, Miss., *Sentinel* details a visit of the editor to a cotton plantation, the work on which was entirely performed by white laborers. The number of acres cleared was about 900, of which 600 were planted with cotton. There were twenty-one men and seven or eight youngsters who worked on an average about twenty acres each. It was one of the best arranged and managed plantations in the cotton region. The crop promise was excellent, and estimated at 1,200 pounds to the acre.

—Our readers will remember a statement that we published some time since, of Capt. Geo. Pierce's orchard of six acres on a naturally poor soil, formerly known as Poverty Point, which produced, last year, apples enough, with some vegetables grown on the same land, to amount to about $1800. A correspondent of the Boston *Cultivator* says there is another abundant crop now on the same trees, while nearly all the trees in other parts of the town are destitute of fruit. The only secret, Mr. P. says, is in the fact that he takes care of his orchard.

INDIAN SUMMER.

There is a time, just when the frost
Begins to pave old Winter's way,
When Autumn in a reverie lost,
The mellow daytime dreams away.

When Summer comes, in musing mind,
To gaze once more on hill and dell,
To mark how many sheaves they bind,
And see if all are ripened well.

With balmy breath she whispers low;
The dying flowers look up and give
Their sweetest incense ere they go,
For her who made their beauties live.

She enters 'neath the woodland shade,
Her Zephyrs lift the lingering leaf,
And bear it gently where are laid
The loved and lost ones of its grief.

At last, old Autumn, rising, takes
Again his sceptre and his throne
With boisterous hand the tree he shakes,
Intent on gathering all his own.

Sweet Summer sighing, flies the plain,
And waiting Winter, gaunt and grim,
Sees miser Autumn hoard his grain,
And smiles to think it's all for him.

PRESERVATION OF DAHLIA ROOTS.

Being fond of good dahlias, and grieved at the frequent losses that come under our notice, we beg to commend to the attention of those who too often have to lament the loss of their favorites, the following effective method of preserving their roots; and we mention the subject thus early, so that all our subscribers may get our hints in time. The tops being killed by the autumn frosts, and thus become unsightly, must be cut away, leaving the roots undisturbed for several weeks in order to feed the nascent buds destined to break the following spring. For, if at the time of removing the plants from the ground these buds are immature, there is great probability that the tubers will perish before the spring; or should their vitality remain, there will be found a difficulty, if not an impossibility, of getting them to "break." The next business is to lift the plants from the ground; and in doing this the greatest care should be taken to preserve their fibrous roots, for the plants require constant nourishment. A number of these rootlets will, however, under the most careful handling, be broken off, and the supply of sap interrupted until new roots are made; but with those plants that have well-swollen buds their reproduction is soon effected. When the tubers are raised from the ground, they should immediately be transferred to their winter quarters, where their fibrous roots must be carefully spread upon a thin layer of sand or earth, and at once covered with about an inch of the same, leaving the greater portion of the tuber bare. During winter they should be kept slightly moistened. For wintering these tubers, there is, perhaps, (unless a special place is provided for them,) no better place than under the stage of a cool green-house; but, whatever place may be assigned them, it is indispensable that it admits a moderate amount of light; is kept cool, but above the freezing point, and that the atmosphere is such as suits growing plants generally; alike free from both saturation and dryness, which will with equal certainty engender putrefaction.

American Durhams Sent to England. —A two-year-old bull, three two-year-old heifers, and four yearling heifers were shipped at New York for England. In noticing this shipment, the *Country Gentleman* says: "The Third Duke of Geneva, who heads the list, we presume to be as good a bull as ever crossed the Atlantic *in either direction*. The heifers are really a fine lot, and will be heard from in their new home with as great credit to themselves and to the country, as any thing that has preceded them." They were bred by James O. Sheldon, Geneva County, N. Y.

Feed Racks.—Never feed your cattle in the yard without a "rack." Economy rightly enough shrugs her shoulders at so slovenly a practice. The actual loss to the farmer from this waste is equal to the cost of half a dozen racks and the expense of keeping them in complete repair for years. Any farmer who has an ax, saw and auger, can make one.

THE
NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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NOVEMBER ASPECTS.

The earth mourneth and languisheth; Lebanon is ashamed and withereth away; Sharon is like a wilderness; and Bashan and Carmel shake off their fruit.—*Isaiah* 33: 9.

NATURE in her winter garb is well drawn by the inspired prophet in the above passage. He was in the habit of alluding to the varying aspects of nature for the purpose of increasing the force of his terrible maledictions against the people whose sins he was rebuking.

Last month we briefly adverted to the somewhat popular opinion that the autumn months are more unfriendly to kind and genial feelings than those of any other portion of the year. But *November* is not all high winds and cloudy skies. It has many pleasures, if we will lift up our matter-of-fact eyes, and find that there are matters-of-fact we seldom dream of. The fine days that come in the Indian summer, the new animal life about us, the flight of birds on their annual migration from north to south, and the delightful reunion of kindred and friends which has become so common at our Thanksgiving festival.

Mr. Beecher says, "we often hear people say, 'Oh, the dreary days of November!' The days of November are never dreary—though men sometimes are. There are suggestions in it that lead us to serious thoughts. We are apt, at that season of the year to feel that life is passing. After the days begin to grow short in summer, I cannot help sighing often; and as they still grow shorter and shorter, I look upon things, not with pain, but with a sad and melancholy eye. And when autumn comes, and the leaves of the trees drop down through the air and find their resting places, I cannot help thinking that life is short, that our work is almost ended, and that we are nearing the tomb. It makes me sad; but there is a sadness that is wholesome, and even pleasurable. There are sorrows that are not painful, but that are of the nature of some acids, and give piquancy and flavor to life; and such are the sorrows which November brings. That month which sees all the year disrobed, is not a dreary month. I like to see the trees go bed as much as little children, and I think there is nothing prettier in the world than to see a mother disrobe her child, and prepare its couch, and sing and talk to it, and finally lay it to rest. I like to see birds get ready for their repose at night. Did you ever sit at twilight and hear them talk of domestic matters, and go over, apparently, with each other, the troubles and joys of the day? There is an immense deal to learn from birds, if a person has an ear to hear. And so I like to see the year wound up. I like to see the trees with their clothes taken off. I like to see the hard lines of a tree. I like to see its anatomy. I like to see the preparation that God makes for winter. How

everything is snuggled and packed! How all nature gets ready for the cold season! How the leaves heap themselves upon the roots to protect from the frost! How all things toughen to stand the buffetings of the winter! And hardy vines and roots bravely sport bannered leaves, that the frost cannot kill, sending them up clear into the coldest days. November is a dreary month to some; it is sad to me; and it is a sweet sadness it brings to my mind."

"Farewell to Autumn and her yellow bowers,
Her waning skies and fields of yellow hue;
Farewell, ye perishing and perished flowers,
Ye shall revive when vernal skies are blue,
But now the tempest cloud of Winter lowers,
Frosts are severe, and snowflakes not a few;
Sifting their leafless boughs against the breeze,
Forlorn appear the melancholy trees."

If any there are to whom November brings a sadness which is not "sweet," they can dispel it by cultivating a love of Nature; by occupation in the garden, or in the green house; by reading about and making preparation for the pleasant duties in working among the soil in the coming Spring. If these fail there is one other resource that cannot fail, and that is, "*going about and doing good.*" There is no balm like this, no despondency that can withstand its attacks. It works radical and permanent cures—assuages real grief, even, and builds up the whole christian character.

WORK FOR NOVEMBER.

If the ground is not frozen, ploughing may be advantageously done this month. The teams are sturdy and strong, and so much will be done to help along the work in the hurry of spring. The turfs will be rotting in some degree, so that they will more readily impart their fertilizing properties to the corn plants growing upon them.

See that the asparagus bed is manured and that it is protected a little.

Protect such plants in the garden as need it.

Instead of earth against the house for banking up, rotting away the wood work, use evergreen branches, hemlock, or white or yellow pine. After the snow has been blown in among them, they will keep out frost far better than banks of earth. The labor of banking with brush will not be half that of using earth, in most cases, and they are altogether cleaner, while being more effectual.

The season has been so damp that some fields of corn have not thoroughly ripened. It will be necessary to stir it occasionally if spread upon the floor. If it is in airy bins it may be safe.

Feed all fattening animals liberally, and keep them dry and warm.

Do not allow the cattle to remain too late in the mowing fields, and feeding them until the grass roots are laid bare, and made liable to be winter-killed. This practice is an exceedingly injurious one. If less feeding and poaching our mowing fields were to take place, there would be less complaint of winter-killed grass in the spring.

Store away *peat* for use on the manure heaps through the winter. Every cord used will be a cord of the best manure in the spring, and will increase the crops wonderfully.

Ditch and drain that old meadow near the house. There is only a single acre of it, which, when well drained, will yield 3,000 pounds of the best hay annually, instead of the crop of frogs and skunk cabbage it has produced for the last forty years.

Gather up the potato, pumpkin and other vines, and mulch the peach trees, or other plants that need it.

In short, make some *permanent* improvement on the farm which is like so much cash put at interest.

FERTILITY.---SILEX, &c.

Science has demonstrated that in order to be fertile, a soil must contain all the mineral ingredients which are found by analysis to exist in the ashes of the plant, or plants, it is required to sustain; and that these must exist in such a state or under such conditions as to be at all times readily available to the roots, and in such profusion as to ensure an adequate supply being kept up during the period of their growth.

The texture of the soil must be neither too coarse nor too fine, but should consist of an intermixture of larger particles, with a due quantity of impalpable matter, so as to secure to it a degree of porosity, and render it easily penetrable by the fructifying principles of air, warmth and moisture; together with an ample provision of vegetable matter in a condition to undergo chemical changes, as the necessities or wants of the cultivated vegetables require.

With this texture and mineral constitution, the process of enrichment by the application of various decomposing animal or vegeta-

ble matters, will be comparatively easy. The necessity of these conditions to ensure fertility and productiveness is demonstrated by the well-known physiological fact, that plants do not possess the power of generating for, and of themselves, a single elementary particle of which they consist. They are only possessed of the capacity of modifying, to a certain extent, the form in which these particles are combined with each other. These facts are far too generally overlooked by the farmer.

When the cultivation of a particular plant proves unsuccessful on one species of soil, the observing cultivator tries it on another species —changing oftentimes from clay to sand, and from sand to clay. This method is frequently successful; the plant finding its proper aliment in its new location, grows, and produces its seed, well-developed and mature; but another, adopting the same migratory system, does not meet with the same result as the former. Hence chemical analysis is requisite to explain the difference in the results.

All clay soils are not produced from the same kind or sort of rocks. There may be, indeed, a wide difference in this important particular, and yet the eye be wholly unable to detect it. The same remarks hold equally good in regard to sandy lands. All soils are composed of the debris of rocks—old, rotten, broken rocks—or the disintegrated particles of them, which overspread the earth in the form of sand, gravel and clay.

Mould is formed by the addition of decaying vegetable or animal matter to these, and is "the half way house between the living and the dead in the organic and inorganic world."

By examining the subject critically, we find that nearly all the sand found on the earth's surface is derived from water-formed sandstone, or fire-formed granite and other rocks, marked by the characteristics indicating an igneous or fiery origin.

The purest sand known is denominated *silica*, a term derived from the Latin word silex, "*flint*." This is a simple mineral, possessing acid properties. It is produced by a chemical union of oxygen and *silicon* or *silicum*, in the proportions of two atoms of the former with one of the latter. It is sometimes called silicic acid, in consequence of the facility with which it combines with lime, soda, alumina, potash, magnesia and iron, to form the substances called *silicates*, such as silicates of potash, silicates of soda, lime, &c., &c.

Oxygen, it is well known, is the vital principle of the air, which supports respiration and combustion, &c.; and in sand derived from the pure flint or *silex*, we find there are, in every one hundred parts, by accurate measurement, fifty-two parts of oxygen and forty-eight of silicon The quantity of oxygen, therefore, contained in rocks, is very great. It has been estimated by philosophers, that more than three-quarters—probably 80 per cent.—of *all* the rocks, are composed of silica; consequently more than one-half of the actual crust of the earth is oxygen.

If we burn the straw of wheat and analyze the ash remaining after deflagration, we shall find that 67 per cent. of the mass is silica. The same is true of sugar cane, the ash of barley, rye, oats and Indian corn, and the maize plant generally. Yet sand is but very sparingly soluble in water. The action of the roots of vegetables effects its decomposition, to a very limited extent, and slowly. Pure silica is not extensively found; a little is supplied by crystalized quartz or flint, but the great mass is composed almost entirely of the silicates of lime, alumina, potash, iron, magnesia, soda, and manganese. These silicates act with greater or less energy upon vegetation, and are, in part, the cause of fertility in soils. To render them soluble, and fit to assist in supporting cultivated crops, is the great object, or one of the objects, of manuring. Unless they be rendered appropriable, it is vain to expect a sound and well-developed crop; they constitute the *bones* of vegetables which can never attain vigor, or health, without them.

For the New England Farmer.

FEEDING STOCK.

Cutting Hay.

The questions have been asked in the FARMER, will it pay to cut good hay for stock? What are the real benefits of the practice?

Young farmers are often puzzled by the diversity of opinions and practice on this subject. The arguments sometimes advanced by the advocates of the practice are so plausible that many are captivated by them; but after whirling the hay cutter a few years, and due reflection, they usually conclude that our domestic animals have pretty good hay cutters of their own ready for use, and if better ones were necessary, nature would have provided them. If those who have any doubts upon the

subject will examine it in the light of a few plain and well known physiological laws, they will see at once, without the trouble of experimenting, its real merits.

Simply passing hay through a cutter adds nothing to it; pouring on water and mixing meal with it, and feeding out immediately, extracts nothing from it. In this form of cut feed it is eaten or rather swallowed quicker. Here is a saving of time, and this is as far as some reason. They look upon eating as a task, and he who does it in the quickest time, whether man or horse, is the best fellow. But let us carry our inquiries a little further. Is this hastily eaten food in a better state for digestion than if it was eaten dry? The first step towards easy and rapid digestion, is thorough mastication. With grain, hay, or any dry fodder,—substances difficult of digestion, —it is highly important that this preparatory process should be perfect, that these materials may be acted upon by the full power of the saliva and the gastric juice. This is done when they are fed dry, and the animal chews slowly; the prolonged chewing excites a copious flow of saliva, which moistens and softens the food by the time it is made fine enough for swallowing. Then, if the gastric juice is not diluted and cooled by drinking a large quantity of cold water, just before or after eating, it will at once have the full benefit of that powerful solvent.

The rapidity with which an animal swallows depends upon the moist and smooth condition of the food, rather than its fineness. Meal is fine enough for swallowing, but it cannot be swallowed dry. A horse must continue to grind it until it is saturated with saliva. Yet mix it with sufficient water and he will drink it. As far as the act of swallowing is concerned, it makes little difference whether the food is moistened with saliva or water. Therefore every quart of water put upon the food tends directly to prevent fine chewing, a free flow of saliva, and the immediate action of gastric juice; and hastily eaten cut feed must require a longer time for digestion, or pass through the system imperfectly digested. For want of thorough preparation, by mastication, the stomach and intestines have a double task to perform, or there is a notable loss of food. Let every one judge for himself, which is best for his horse, a full allowance bolted down, or a scanty one thoroughly masticated. Said an old horseman to me, recently, "Two quarts of grain fed dry, will do more good than three quarts when saturated with water." Old hay and oats fed dry is the standard diet in England for horses kept for speed. Meal is readily eaten dry, if hay is in the manger at the same time. Some experienced feeders pour the grain over a portion of the hay. It is natural for horses to eat a considerable portion of their time, and the pleasure of eating lies in masticating. Why not let them enjoy all there is of pleasure in slowly chewing good sweet hay and grain? Cut feed, which they eat so quickly, does not satisfy them; when fed on it for a long time, they show their dissatisfaction by biting and gnawing their mangers, eating their bedding, and not unfrequently become inveterate cribbers.

One of the principal arguments in favor of cut feed, is, that coarse, dusty and poor hay and fodder will be eaten which otherwise might be rejected. In some markets and upon many farms, grain is cheaper than first quality hay; consequently poor hay or straw is used with a large quantity of grain. Under such circumstances cut feed has become a common mode of feeding. Sometimes sufficient grain is given for the support of the animal, while the poor fodder is added merely to give bulk to the food and preserve health. In another system less grain and more of this poor fodder is used, under the belief that whatever is eaten must afford nourishment. Straw and poor hay are harder of digestion than good hay; consequently there is greater necessity for thorough mastication when they are fed. Animals fed chiefly on grain, or confined exclusively to one quality of hay, and that a poor one, will eat that poor stuff dry as freely as is for their good; and it is poor economy to force them to eat large quantities of what is difficult of digestion, and deficient in nutriment.

Again, it is said in favor of cut feed that the water absorbs and lays all dust that may be in the fodder. This is true, and it is also true that the dust and dirt thus absorbed is eaten. Would it not be better to remove the dust by shaking the hay lightly in a current of air?

These objections to cut-feed are not so serious with ruminants as with horses. Their more complicated and powerful digestive organism extracts nutriment from what would do horses little or no good. In the act of chewing the cud, they can recover in a measure the loss from too rapid eating. There is, undoubtedly, a gain in cutting corn fodder for them, even when it is fed dry, but all kinds of stock prefer hay, if eaten dry, its natural length; when cut into short lengths the numerous sharp ends irritate and prick the mouth.

Steaming and Cooking

Produces a radical change in food, which facilitates digestion and assimilation. Some men have confidently asserted that the time would soon come when it will be considered economical to steam or cook all the winter food of all kinds of stock. The present state of agriculture will hardly make such a vast amount of cooking advisable. Still the very young, the old, the sick, and those designed for the butcher, claim some indulgence or extra care. For them something resembling cooking is practicable. It is a sad mistake to turn off young stock upon the coarsest and toughest kinds of fodder, while their digestive organs are weak and immature. An old horse or cow whose grinders fail prematurely may

be made to eke out a few more years of usefulness by a little help in preparing the food. Boiling water poured upon meal or hay in a barrel or miniature steam box, and covered quickly and tightly, and kept warm a few hours, will produce a partial cooking. Could corn stalks and straw be thoroughly steamed, they would afford a far larger per cent. of nutriment. But I have tried steaming meadow hay and found it brought out the sour, strong meadow smell and taste so fully that the dry was preferred to the steamed, even after it was sprinkled with meal. Of course where steaming is practiced the hay cutter is necessary to reduce the fodder to a fine state.

Generally speaking, the field is the best place to prepare food. By cutting all grasses and grain intended for fodder while the stalk is tender and full of sweet juices, and carefully curing and saving them, our animals will be saved much hard and useless grinding. The stalks and leaves of grain and the grasses are merely to support and produce seed, that it may in turn reproduce itself, when the seed is fully developed little remains in the stalks except tough, woody fiber. Where only fodder is desired, it is plain its quality will depend upon the time of cutting. It is easy, by cutting early, to have tender, nutritious hay that will keep animals as slick, plump and healthy, as when fed upon grass. There is no economy in raising poor fodder year after year upon land which admits of improvement.

If the time and expense required to work up poor hay into palatable food were spent in reclaiming the land that produces it, tenfold better results would be obtained. Hay of inferior quality occupies as much ground, requires as much labor to harvest and feed, and frequently more, while its nutritive value falls far below that of first quality.

How often shall Stock be Fed?

Upon this point, also, there is a wide difference of practice. I have been upon farms where cattle were fed seven and eight times a day, and upon plantations at the South where only one meal per day was given to mules, although at hard work. Here are extreme cases. In one, the plan of frequent feeding is adopted to tempt the stock to eat poor fodder; in the other, the convenience of man was consulted, rather than the strength and health of his dumb beast. What is the proper mean? What shall be the guide? Domestic animals are subject to the same physical laws as man, and the same code by which he regulates his own diet will furnish a safe guide for theirs. Dry, solid food requires a different management from tender, succulent herbage. Sufficient for one meal should be given at one time, and no more until that is digested; for the stomach needs its periods of rest. It likewise partakes of the strength or weakness of the body; nor can it perform its office well while the whole system is under violent exercise; therefore, it is an error to give it a heavy task when great exertions are required of the body, or at night after it has been exhausted by extra hard work.

There is a wide scope for the exercise of sound judgment in feeding. Many little things daily occur that must be taken into account. To feed well, and yet economically, is a nice point to determine. Americans are justly called extravagantly wasteful in their own food, and would it be strange if they were found so in feeding their stock. Give a working animal all he will eat; cram one fattening all you can, are common rules. Would it not be better to say—only what they can digest? for the feted breath and strong, unnatural odors that are often noticed in stables, disclose the fact that the stomach is over-loaded, and food is passing through them undigested. The excess of food thus fed is worse than wasted, for it weakens the tone of the digestive organs and prevents perfect work, when only a proper quantity of food is given.

The subject might be further pursued, but enough has been said to show that the art of feeding is of vital importance. Oftentimes the profit or loss of a farm turns upon its successful practice. The crops may be most bountiful, yet if there is no economy in feeding them out where shall the profit be?

Lawrence, Mass., Oct., 1867. N. S. T.

For the New England Farmer.

OXFORD COUNTY, MAINE.

I have just returned from the fair at Paris. For fear of mystifying my readers, perhaps I had better say that the fair was at South Paris, Me., being the twenty-fifth of the Oxford County Agricultural Society. "Every body and his wife" were there,—many of the good wives wrapped in furs, ready to defy the cold weather that Monday's rough snow-storm threatened to send immediately.

In the upper exhibition hall, commodious and comfortably supplied with seats, we found the usual assortment of knit coverlets and tidies, "rising-sun" and patchwork quilts, lamp mats and pincushions, slippers and worsted work, pictures and vases,—mostly all of home manufacture,—for a county fair, is, of course, for the benefit of home exhibitors. The flannels, frocking and carpeting were excellent in quality and make. Some of the hand-made rugs were very beautiful,—two so perfect as almost to mock the beauty of a Brussells mat. The display of fruit was very fine. The various specimens were of "every day" glory,—nothing uncommonly large or rare,—but luscious and fair, as if the grower had taken pains to provide his family with the choicest kinds. In the lower hall the display of agricultural implements was small. Mr. Merrill of South Paris presented a Pettengill's Cultivator, an implement capable of various transformations, and much liked by the farmers about here.

Besides plows and cultivators, he showed also his Yankee churns, one with, and the other without the air pump. Hardly the thing, I should say,—not force enough in the dasher, and too small for this butter-making district. Mr. J. A. Burns had a strange looking machine,—a root digger and cutter.

Mr. Simeon Pierce, of North Norway, a minister, had the best display of vegetables and root crops. Among many noble things, beans with pods a yard long; snake cucumbers, ditto, and some beautiful Colorado wheat, all proving that ministers can practice as well as preach about the dignity and Christianity of labor, and not disgrace the precept either. I had expected a better show of squashes, as another minister, Rev. Mr. Dunham, of Woodstock, has been raising some monsters, one weighing over 200 pounds. I wondered also that hops were not visible, as Oxford county has raised, it is estimated, $150,000 worth. Bethel alone raised nearly $40,000 worth of this unnecessary article.

Witherm V. Grafferm, of Sumner, had the best result in stock, forty-two animals being presented. A full-blooded Durham calf, four months old, weighing 450 pounds, also a Durham and Hereford bull calf, six months old, weighing 630 pounds, attracted much attention.

Stock raising appears to be but little followed in this part of the State, and I wonder at it, where the farmers own so many acres. With Maine farmers, "ten acres enough" is neither a fact, nor a principle. Many of the farms are so far from a good market that land is very cheap, and labor being high, the farmer seems to have a mania for owning as much of this cheap, unimproved land as possible, and he is not always particular in choosing the best land either. He invests all he can in accumulating acres,—perhaps runs in debt for a part. This hampers him, and the want of a market prevents good sales and thorough cultivation, and the man is always poor,—the mortgage never removed. There is a place not far distant called Hungry Hollow, and it has tormented me ever since I've seen it. Down an almost perpendicular hill, rocky and dangerous, and covered with thick undergrowth, at the risk of overturning the wagon and breaking our necks, we descended into a rocky, scrubby valley, and found a rude, half-finished shanty, occupied by a fat, lazy farmer, wife and two delicate children, who had been there for years. After passing with difficulty the house, and struggling up the steep declivity of the opposite side, we halted on the summit and looked back. A stream meandered through this rocky place, and here and there were cultivated spots, but no where a good field of corn or potatoes. The frost touches here early in the fall and late in the spring, so crops are often a failure; but the man seems contented to raise only enough for his family, look at his rocks, and let the wind sift through his house. Rocks, rocks, rocks; and the more he owns, the more he wants to own. I will not say that all farmers like such a barren place, for there are rich farms here, and practical workers; but I've ascertained that this man's head is as hard as his rocks, and his mind as deep with barren satisfaction as his valley.

But I'm digressing far from the Fair. Passing by the base ball games and side shows,—one exhibiting a majestic piece of manliness, seven feet ten inches high, weighing 410 lbs., and a freckled fat woman of 580 lbs.,—I will mention a race that occurred the third day, for the Society's purse for the best horse raised and owned in the county, won by Meddlesome, owned by America Andrews, of Paris. First half made in 1.21, and the heat in 2.43. In a volunteer trot, a horse, five years old, belonging to Mr. Heald, of Sumner, won, making the heat in 2.39. This horse has had only three weeks' training, his owner but lately discovering his fleetness. In the ploughing match, Charles H. Durell tried the Western plan of harnessing three horses abreast, and with a Hussey plough, made the dirt fly briskly.

Fairs are pleasant places to see human ambition and practical poetry. The theories worked into facts are astounding to the doubting vision, especially in the machinery that saves so much labor, yet doubles farm profits. If our fathers and mothers could rise from their graves and take a walk through our fair grounds, when in full operation, they would wonder where the spirit of invention was when they existed. THEO. WILLISTON.

Norway, Me., Oct. 3, 1867.

FALL AND WINTER CARE OF SHEEP.

Now is the time to prepare lambs for winter. They should be kept growing every day. There is a difference of opinion whether they will do best on old pasture, or on the after growth of meadows and new seeded stubbles. Our opinion is that they will do well enough on either, provided there is an abundance of fresh, sweet feed. If put on old pastures, they should be those which have been well fed down, and then allowed to start up fresh and green. It is the opinion of most successful flock masters that as soon as the grass begins to be rendered innutritious by frost, it is expedient to give tegs a little extra feed. They grow finely on pumpkins or roots. Wheat bran is one of the very best feeds for them, and it can be mixed with a few oats as the grass grows poorer.

It is a decided mistake, however, in our judgment, to *pamper* tegs in the fall. If fed high at this season, they feel their winter feed less; and it must be increased to an extent which renders their wintering less safe. We have, it is true, seen many a flock of them very highly kept in winter which went through

"splendidly," and were of the size of ordinary two-year-olds at their first shearing. Indeed, this is the ordinary course of those who breed tegs to sell at high prices. With great care and judgment, and especially in small flocks, it may ordinarily be safe enough—but we have known too many severe disasters to grow out of the practice not to caution the mass of sheep-growers against it. We esteem *pampering* sheep at any age, except when they are being fattened to kill, injurious—and especially so before they reach their second year. Their natural habits are unfitted to it, and their constitutions will not safely bear it. When they are appearing best, the destroyer sometimes comes so suddenly and fatally as to defy all discovery of *proximate* causes and baffle all remedial measures.

For both the fall and winter feed of tegs we prefer, among the grains, oats and bran. Both (unlike corn) tend to the production of muscle (lean meat) instead of fat, and therefore promote growth instead of unnecessary obesity. They afford aliment in a less concentrated and therefore less stimulating form. They are, in popular phrase, less "heating" and less "feverish," feed, i. e., they do not so much predispose the system to inflammatory tendencies and attacks. If fed separately, equivalents of them in weight are probably about equivalents in nutriment—but we much like the plan of feeding them mixed, say one part oats to two of bran; and to Merino tegs well brought into winter, a gill of bran and half a gill of oats, per head, with a little green feed (say a gill of turnips,) with a full allowance of bright, fine, early cut hay, ought under ordinary circumstances to be a sufficient daily allowance for "store" tegs in winter. By "store" tegs we mean those not fitted up to sell, or show at Fairs, or raise "brag" fleeces from—but those intended to be kept in the flock for regular wool growing purposes.

Fine, green, early cut and well cured hay is almost indispensable in wintering tegs. No grain or root feed can properly supply the want of it. We would rather winter tegs on it without any grain, than on coarse, dry, overripe timothy, with any amount of grain and roots. We esteem fine, red clover, cured "green as tea," a very important, if not necessary ingredient in hay for tegs. We would prefer to have it form from a third to a half of the mow.

Cold, severe autumn rains benefit no sheep, and are perceptibly injurious to tegs, especially if they are thin and backward. When these rains begin to fall, tegs should be brought near the barn, and run in during their continuance, and as winter approaches, also during cold, raw nights. If kept up more than half a day, they should be fed hay in a rack. But we had rather they should remain out of doors than to be crowded into some little, stinking (that we should use such a word!) hole, with mud or wet dung up to their fetlocks, there stand fasting for twelve or twenty-four hours.

It is useless to talk about ventilation, and perfect dryness under foot, in a sheep shelter of any description. These topics are stale. But we may suspect some men, who are not used to it *in their own houses*, do not know what proper ventilation is. We propose the following tests:—When a night's confinement of the flock in the sheep house produces even a slightly disagreeable animal smell, or a temperature above 60 degrees, the house is not properly ventilated.—*Dr. Randall.*

FODDER CORN.

The season has been so excessively wet in New England that an argument based on a severe drought in a section as near as Western New York has an air of novelty with us. Mr. Harris of Rochester, author of "Walks and Talks on the Farm," published in the *American Agriculturist*, thus states the reasons for the resolution that "another year I will not be without a piece of fodder corn, on rich land, near the barn yard, to be cut up in August for milch cows:"—

We have had one of the most severe droughts I have ever known. I have always been partial to a dry, hot summer—it gives such a splendid chance to kill weeds—but this is rather too good. At the East, I understand, they have had a very wet summer, and the papers complain that the potatoes are rotting in consequence. Here we shall have few or none to rot. Corn will not be half a crop. I did not sow any corn for fodder, but we have been obliged for some time to cut up corn for the cows. As it was drilled in, and was a little too thick, I do not begrudge it the cows as much as if it was planted in hills. There is a heavy growth of stalks, and I am astonished to see how little ground we have to go over for a day's supply. Another season I will not be without a piece of corn fodder, on rich land, near the barn-yard, to be cut up in August for milch cows. Some of my neighbors had a piece this year, but it was sown broadcast, and the dry weather parched it up. In moist seasons, corn sown broadcast sometimes does well, but, as a general rule, it should be sown thickly in drills, and thoroughly cultivated, and the more highly it can be manured, the better. Rich land, thick seeding in drills, say three bushels per acre, and thorough cultivation, are the essentials in raising corn fodder. And in such circumstances it is astonishing how much feed can be obtained from an acre.

—Prof. Turner of Jacksonville, Ill., received last year $100 for grapes growing on an elm tree. For years he tried to prevent the vine going into the tree.

ROTATION OF CROPS.

In order to render the action of manures more effectual and secure the greatest possible amount of produce from a given quantity of aliment, and, at the same time, insure an increase of productive energy in the soil cultivated, a system of *rotation*, or rather a variety of systems, has been introduced.

A proper rotation of crops is considered in England "as the most prominent feature in good farming; as the most important particular that has been treated of by modern writers on husbandry, and the subject on which they have thrown the greatest light; as capable of furnishing a considerable increase to the produce of the land; as peculiarly constituting what may be called *the soul*, or essence, of husbandry; in short, as the true ground-work of general improvement;" and if well understood, as the most likely means of promoting the cause of agriculture, and the interests of the country. It cannot, indeed, be represented in too important a light, nor too minutely examined, its object being to ascertain, "*that mode of management, which is the most likely, for a series of years, to yield the greatest quantity of useful produce, at the smallest comparative expense and risk, from any given extent of land.*"

We will not attempt now to discuss the principles of these systems or the analogies upon which they are predicated. The following courses, however, although far from embracing all the products involved in a thorough course, as prescribed by the British and German culturists, have been found highly favorable in our climate, and in many instances, have been productive of most excellent results:

I. 1st year, Corn and roots well manured;
2d " Wheat sown with clover seed, fifteen pounds per acre.
3d " Clover, one or more years according to the amount of manure on hand.

II. 1st " Corn and roots with all the manure;
2d " Barley and peas;
3d " Wheat sown with clover;
4th " Clover one or more years.

III. 1st " Corn and roots with all the manures;
2d " Barley;
3d " Wheat, sown with clover;
4th " Pasture;
5th " Mowing;
6th " Fallow;
7th " Wheat;
8th " Oats, sown with clover;
9th " Pasture or mowing.

It will be observed that, in each course, the number of fields corresponds exactly with the number of changes, and that, in the first, there are three, in the second four, and in the third, nine.

The adoption of a judicious system of rotation requires some important pre-requisites in all cases, and the division of a farm into fields or separate enclosures, which is requisite where pasturing constitutes one of the changes, will generally be found too expensive for most farmers, and especially for such as possess limited means; yet that the principles on which the practice is based, are clearly philosophical, few persons, it is presumed, will for a moment doubt.

It is a general practice, all over New England, not to cultivate the same crop on the same land, two or three years in succession. All, therefore, practice rotation in their crops, but do not extend it into a well-defined system.

Human wisdom has not yet discovered any means whereby we can tell all that is lacking in any soil, which a certain crop requires. A careful analysis of the soil may show us something near what is wanted, and be of essential service. But such a process would be too tedious and expensive. It has been proved in a thousand cases, that *changing the crop* ensures decided advantages; and this is our cheapest and easiest mode of proceeding.

For instance, we sow a crop whose wants are largely of *potash;* but the soil abounds in *lime*, and has little potash. On another farm, a crop is put in which demands lime, but the soil is deficient in that, and has a large supply of potash. In both these instances, there is loss, because we do not know what the soil contains, and what the plant requires.

Prof. Johnston, in one of his lectures, shows *why a rotation of crops* is necessary. He says: Suppose the soil to contain a certain average supply of all those inorganic substances which plants require, and that the same corn crop is grown upon it for a long series of years—this crop will carry off some of these substances in larger proportion than others, so that year by year the quantity of those which are thus chiefly carried off will become relatively less. Thus, at length the soil, for want

of these special substances, will become unable to bear a corn crop at all, though it may still contain a large store of the other inorganic substances which the corn crop does not specially exhaust. Suppose bean or turnip crops raised in like manner for a succession of years, they would exhaust the soil of a different set of substances till it became unable to grow them profitably, though still rich perhaps in those things which the corn crop especially demands.

"But grow these crops alternately, then the one crop will draw especially upon one class of substances, the other crop upon another; and thus much larger crops of each will be reaped from the same soil, and for a much longer period of time."

A LANDMARK.

The question is sometimes mooted whether there has been any actual progress in the art and science of agriculture during the last half century. Whatever may be the result of this discussion, we think there can be no doubt as to the progress of the agricultural press, during that period. Still this progress has been so quiet and so gradual that we are occasionally startled by some old landmark that reveals the actual velocity of the "stream of time"—which is impelling our onward course.

In writing up the history of the Kennebec Agricultural Society, the oldest society of this kind in that State, the Maine *Farmer*, presents one of these landmarks in the following extract from the records of a meeting of the Society held Nov. 6th, 1822:—

"*Voted*, That the Society take two copies of the publick Paper published in Boston called the NEW ENGLAND FARMER, and that two of the Trustees become subscribers,—therefore Chosen, Samuel Wood, Esq., and Willm. Richards, Esq., subscribers as above."

As this vote was passed during the first year's existence of the FARMER it is possible that Samuel Wood and William Richards, Esqrs. were its first subscribers in Maine. But whether they were the first or not, it is well known that for a long time, although the NEW ENGLAND FARMER was the only agricultural paper in New England, its circulation was extremely limited. We were told a few months since by Mr. Durant of Lawrence, who for several years furnished the paper on which it was printed, that one "bundle" sufficed for two weeks—less than five hundred sheets per week! Yet such has been the increase of our circulation, and such the improvement in the agricultural press, that we now furnish a sheet about three times the original size of the FARMER, and notwithstanding the stimulus of war prices, the rate of yearly subscription is the same now as when this ancient and honorable society passed its resolution to "take two copies of the publick paper printed in Boston, called the NEW ENGLAND FARMER."

There are now six weekly and two monthly agricultural papers printed in New England; the average circulation of which is considerably larger, counted by thousands, than was that of the single one forty-five years ago, counted by hundreds. And yet at that period both the agricultural editors of the present NEW ENGLAND FARMER had completed more than half the prescribed course of the only Farm School known to the youth of that generation.

AMERICAN POMOLOGICAL SOCIETY.

This Society held its eleventh biennial session at St. Louis, Mo., commencing September 10th. Previous sessions have been held successively at New York, in 1848; Cincinnati, in 1850; Philadelphia, in 1852; Boston, in 1854; Rochester, in 1856; New York, in 1858; Philadelphia, in 1860; Boston, in 1862, and Rochester, in 1864. On account of the prevalence of the cholera, the session for 1866 at St. Louis, was postponed to 1867. At the late fair there were exhibitors from the States of Missouri, Illinois, Indiana, Ohio, Kentucky, North Carolina, New Jersey, New York, Iowa, Pennsylvania and Massachusetts. The fruits exhibited comprised 680 dishes of grapes, 82 of apples, 745 of pears and 212 of peaches. The President, Marshall P. Wilder, said the exhibition of fruit greatly exceeded expectation, rivaling anything heretofore seen in the way of pomology. The society adjourned on the 13th, to Philadelphia, two years hence.

We are indebted to the St. Louis *Democrat* for a detailed journal of the proceedings of the late session, including the address of the President, Hon. Marshall P. Wilder, a paper by Thomas Meehan, Esq., of the Philadelphia *Gardener's Monthly*, on "Fire Blight,—Canker—Leaf Blight," and much other valuable information and suggestions in relation to the cultivation of fruit, to which we hope to be

able soon to refer more at length. The following officers were elected.

President—Marshall P. Wilder.
Vice Presidents in New England—Maine, S. L. Goodale; New Hampshire, Fred Smyth; Vermont, E. C. Worcester; Massachusetts, C. M. Hovey; Connecticut, Daniel S. Dewy; Rhode Island, Silas Moore.
Treasurer—Thomas P. James.
Secretary—F. R. Elliot.

For the New England Farmer.

CHEMICAL TERMS---No. III.

We constantly meet with the terms oxygen, nitrogen, hydrogen, phosphorus, ammonia, carbon, carbonic acid, sulphur, sulphuric acid, potash, silex, silicate of potash, lime, &c. Let us inquire what is meant by these terms; what are the substances which are described by them, and what properties they possess.

Oxygen.—This term is derived from a Greek word, *oxus*, which means acid, and another Greek word which means to produce, to bring forth,—it means acid-producer. It was supposed to be the basis of all acids. When existing by itself, it is an invisible, colorless gas. It exists abundantly in nature in combination with other bodies. Of 100 measures of atmospheric air, 21 consist of oxygen. Water consists of one part, by measure, of oxygen, and two of hydrogen. It is found united with metals and earth. Combustion is the union, more or less rapid, of oxygen with combustible bodies. It was called *vital gas*, because it is essential to life,—no breathing animal can live without it,—and yet it is the great agent of decomposition or destruction. It seizes upon metals and converts them into rust, or oxides. When vitality has left organized bodies, their component elements are at once seized upon by oxygen, which unites with their nitrogen and converts it into atmospheric air; with their hydrogen and converts it into water; with their carbon and converts it into carbonic acid; with their phosphorus, and converts it into phosphorous acid,—thus setting all these elements free from the combinations in which they had previously existed, and diffusing them through space. Thus it is obvious that by its universal presence and ceaseless activity, it performs a very important part in the works of nature.

Nitrogen.—This is also an invisible gas, without taste or smell, constituting about four-fifths of the atmosphere. It is found abundantly in the organic kingdom, combined with animal and vegetable organisms. It is found in saltpetre, or nitre,—hence its name, nitre-producer.

Hydrogen.—From the Greek word *hudor*, water,—water-producer, because it is always found in water, which cannot exist without it. Two parts, by measure, of hydrogen, combined with one part of oxygen, form water. Hydrogen is a very light gas. The two parts existing in water, weigh only one eighth as much as the one part of oxygen; one part of hydrogen weighs only one-sixteenth as much as the one part of oxygen In nine ounces of water, only one ounce will be hydrogen. It unites with oxygen to form water, always in the same proportion. Hydrogen gas is easily obtained by separating it from water. When thus separated, if flame is applied to it, it combines again with oxygen so violently as to cause explosion. It is separated from water in the organs of animals and plants and converted into a solid. Combined with nitrogen it forms ammonia.

Phosphorus.—This is a simple substance, highly inflammable, of a yellowish white color. In cold weather it is brittle; in warm weather soft and flexible, like wax. A piece of it laid upon cotton or blotting paper, in a hot day, will take fire spontaneously. The heat of the hand will cause it to take fire. It is not dissolved by water, but is dissolved by ether, alcohol and oils. When exposed to the air, it slowly combines with oxygen, giving off a white smoke and a strong light. In other words, it shines or phosphoresces,—hence its name, from two Greek words, *light* and *to bear*, or light-bearer. When combining with oxygen it emits the smell of garlic. When it burns slowly it combines with three parts of oxygen, forming phosphorous acid. When it is burned more rapidly, with flame, it combines with five parts of oxygen, forming phosphoric acid. When phosphorus has been combined with oxygen, it exhibits the properties of other acids, and will readily combine with lime and other alkalies, and with the oxides of metals. In this way phosphate of lime is formed, which enters so largely into the composition of bones. Formerly phosphorus was obtained from urine, in which it exists in the form of phosphate of lime, phosphate of magnesia, &c. Now it is obtained from bones, the gelatine and lime being removed by certain chemical processes, leaving the phosphorus. By means of lime and heat, it can be made to decompose water, a portion of it combining with the hydrogen of the water and forming a gas,—phosphoretted hydrogen,—which takes fire on exposure to the air. When bones are put into one part, by measure, of sulphuric acid, and three parts of water, sulphate of lime (gypsum) is formed, and falls to the bottom, and phosphoric acid and lime remain in solution. If this solution be evaporated to dryness, a white powder is formed, which is superphosphate of lime. R.

Concord, Mass., Sept. 16, 1867.

For the New England Farmer.

ANOTHER LETTER FROM MAINE.

Maine is a fine State, rugged and strong. The people resemble her hills in possessing that strength of character, without which no man can carve a name nor make a fortune, and with which every legitimate son of Maine has a "free pass" anywhere. Next to Massa-

chusetts, I believe that Maine has the best people in the world.

I was pleased with an editorial in last week's FARMER, upon the "Misrepresentation of Farm Life." It strikes me that all who caricature farm life, or in fact, any life foreign to their own, belong to that class who never look into the *soul of things*, nor understand the economy and motives of the people who perform the work of life, of which every one should bear a part. The "intellectual powers," that a visit of a few weeks upon a farm gave "boldness enough" to thank God for, could not have been *even* thoughtful intelligence, if it "raised them in *their own* esteem, into another race of beings." God never accepts such pharisaical thanks, and I cannot imagine where the writer found her "animated clods." Certainly not among those who make life so practical as she represents it to have been among the "community blessed with miles of the richest lands in all the Northern States." Among the agricultural items of the same issue, we read "He is the most reasonable worker who judiciously divides the responsibilities and duties of life between brain and muscle." I have found many such "reasonable workers" in the several communities where I have visited, in the rural districts of this State, and although I have found ignorant persons here, as elsewhere, yet search as thoroughly as I may, I am doubtful if I could find an "animated clod" throughout New England. I have seen "clods" of a slimy nature and of "animated" baseness, within the "halo of brick walls and narrow yards," individuals who walk with their conscience under their feet, and keep their souls where goodness can never reach them; but never where the earth smiles with innocence and plenty, and nature speaketh with a clear and happy voice. What a libel upon God's noblest work! I think "good clothes" worn every day have much to do with some people's estimation of character;—and farmers seldom dress well, you know!

Hops are housed and ready for marketing, and the general query among hop growers is, "What's hops worth?" Then comes the conversation about this rumor and that surmise, which may directly or indirectly affect the price of this commodity.

I have noticed several articles lately in the FARMER, regarding the disposal of the "plaguy" stones. I have just ascertained one way in which they have been used to a good purpose. My host is quite a hop grower, every year increasing his fields and his profits. Last summer, in setting out a new field, he placed a number of hills so near the wall that the horse in ploughing could not go round them. Being thus left to themselves, they flourished and covered the stones with splendid clean blossoms, free from lice and rust, although vines on poles within six feet were greatly damaged by these pests. These outside hills had been transplanted, but accidentally a few sets were left in the ground, which this year received but little care, no one supposing them of any account until the superior product of the stone-heap was discovered. These vines bore the finest, largest, cleanest blossoms my friend had ever seen. Next year will see his stone fences green with vines, enjoying the largest liberty. He intends to plant a thousand hills and make his walls and stone heaps pay for piling them up. Oxford promises to be the hop-producing county of the State. The farmers are all going into the culture, having had thus far excellent success. One man in Rumford has fourteen acres under cultivation, and is planting more. I did not know before that the dust or pollen of the flowers was very useful as a remedy for nervous complaints. I have used it several times lately, and am charmed with its power.

Potatoes are looking very pitiful; the rust is ruining many a farmer's hopes, and depriving them of the reward of their toil. Many fields make the highways anything but pleasantly odorous. The white muck worm is committing great depredations upon many corn-fields; making fodder where the sower expected meal. The roots are entirely eaten off. Some of the farmers are now cutting their second crop of hay. Apples are not inclined to *embonpoint* this year, either in quantity or quality. Pears likewise. The climate is too cold to raise successfully any kind of pears, but pairs matrimonial.

THEO. WILLISTON.

Norway, Me., Sept. 13, 1867.

For the New England Farmer.

WHEAT GROWING.---ONION WORM AND SWALLOWS.

I take up my pen to inform you and my brother farmers in general that I have been successful in making my *seventeenth* successive crop of wheat. Now I do not make this in any spirit of boasting, but as an encouragement to my brother farmers to endeavor to grow this valuable cereal.

A writer in the New York *Tribune*, who travelled through the wheat region of the West last season came to the conclusion that the farmers of New England must grow a part of their wheat or pay about *fifteen* dollars per barrel for flour. Now what think you, brother farmers, of paying fifteen dollars a barrel for flour, the remaining part of your lives, and of the annual tax thus transmitted to your children, amounting to a sum in successive years, compared with which our portion of the national debt would sink into an insignificant item? There is a large breadth of land in New England that, by judicious management, is capable of producing paying crops of this grain, and leaving a handsome profit to the producer. After careful observation for a long series of years, I have come to the conclusion that the longer a farmer neglects

to grow wheat on his farm, the more he diminishes his chances for a good crop; or, in other words, wheat straw is the best fertilizer for wheat,—containing as it does a large portion of silex in a proper condition to produce another crop. Wheat straw and chaff in no case should leave the farm. The notion that wheat cannot be grown is an idle one, with no foundation of fact. Our hills are, by proper cultivation, as capable of producing this crop as they were one hundred years ago. The wheat fields of Rome, from which wheat harvests were gathered in the days of the Republic are capable of producing wheat to this day.

The wheat crop in our vicinity is being good this season, considering the extremely wet weather. Though comparatively but little was sown, there will be something over one hundred bushels grown in my immediate neighborhood; and less comparatively in most other portions of the town. I shall endeavor to obtain the number of bushels raised in the whole town.

The Onion Maggots destroyed by Swallows.

I have grown onions for the two past years. Last year, being my first acquaintance with the crop, I had to grope my way along, but I had a very good crop. This year I sowed a larger breadth, and was all right till about the 20th of June, when the maggots commenced eating, and I would have sold out the crop for five dollars. On the last of June the barn swallows commenced a raid upon the onion patch and followed it several days, and when the swallows left, the maggots did also, and the result is a fine crop of onions. Now did the swallow destroy the onion fly? I have read of many remedies and tried several to no effect against this pest, but in this case the swallows were effectual. There were at least fifty during the two days that I observed them on the patch, and before a week they entirely left. This seems to be a strong plea for the birds.

The hay crop is good, but much damaged; meadows nearly ruined, many not cut yet; grain good; apples short; corn on high land fair, on low lands poor; potatoes rotting badly, one half of the crop will be lost; second crop of grass will be good if we have weather to save it. H.

Epping, N. H., Aug. 31, 1867.

For the New England Farmer.

POULTRY, DOGS, &c.

The fact is well established in this section of country, that the raising of turkeys has got to be a very precarious business. And why? Turkeys, unlike most other domestic fowls, cannot be raised by every one, for want of territory for them range upon. Possessing a roving disposition, they ramble about over many acres in pursuit of food; consequently the farm, and a tolerably large one, with neighbors at a respectable distance, must be their home. But upon such farms are found most abundantly the enemies of the turkey, such as foxes, skunks, &c. Notwithstanding the utmost care, more and more of them are yearly caught.

But a few years ago my mother thought it "no knack at all" to raise thirty or forty good nice turkeys. A little care and attention until a week or two old, and then they went where they pleased until time to begin to feed them in the fall,—rarely one ever being caught. Now, if you trust them out of sight, there is danger of losing one or more. Recently a neighbor lost his "old gobbler" by a sly fox taking it within ten rods of him, while haying. A grand display of hallooing did no good as reynard bore off his prize in triumph. Last summer he lost some thirty or forty from the same cause. Others who have attempted to raise them lose from one-third to one-half of their flock by means of foxes, skunks, &c. Of late, too, woodchucks have become so plenty that we cannot raise beans in the field, and last season they attacked our squashes and pumpkins.

Now what is the remedy? The dogs that formerly took care of these animals have mostly succumbed to the two dollar yearly tax. Some large fat, lazy, ones, that have rich owners, yet remain, but those sprightly ones, the terror of woodchucks and other small vermin, have left for the interests of the sheep-raiser, but to the detriment of our crops, poultry, &c. While I am ready to admit that dogs sometimes kill sheep, I have good reason for saying that they are sometimes falsely accused, and that the remains of many a sheep that died of disease or old age, have been pointed to as justification of the most unfounded charges against dogs. Still I am willing that the majority should rule. J. B.

Ashfield, Mass., 1867.

INDIAN CORN.

BY CHARLES G. LELAND.

For many a mile on every side
I see the golden corn,
And hear the cricket's notes around
Sound like a fairy born
In concert with the wild bee's drone,
In elfin murmurs borne.

Long, long ago, as legends tell,
The Indian fairy queen
Unto the ancient Delawares
Came down upon the green,
An azure glory round her head,
Her robes a vapory sheen;

And where she sat tobacco soon
Its bitter fragrance flung,
And where her left hand touched, the bean
Rose flowering fresh and young;
And where her right hand swept, the maize
In golden glory sprung.

And whether you do eat it roast
Or take it baked in pone,
Or like it best as Johnny cake,
Still let the truth be known;
That corn first came from fairy land,
And was by fairies grown.

EXTRACTS AND REPLIES.

TOBACCO AND BAD HABITS.

Why is it that so many young men will soil themselves with tobacco? A cigar, a stove pipe hat, a walking cane, a moustache, and exemption from labor appear to be all the characteristics of a gentleman which some of our young men have the ambition to emulate. Why lounging, tobacco-using, rum-drinking and vile language are so much more comely to the young man than to the young woman, I could never understand. If I were a man, I'd be a *man*, and not depend on relations for support, nor on something "to turn up" for a living; nor would I become the slave of so offensive, so debasing and so unclean a habit as the use of tobacco; which it is well known tends to create an appetite or desire for more active stimulants. Young men beware; unless you make up your minds to reform, unless you resolve immediately to, slip your neck entirely clear of the noose which your tobacco and loafing habits have thrown over your heads, your escape will be evidence that the days of miracles have not as yet departed. CORA.

East Charlemont, Mass., Sept., 1867.

REMARKS.—The *Chemical News* notices a letter written by the Abbe Migne, a celebrated literary gentleman of France, in which he condemns the use of tobacco, in a manner which is well calculated to enforce the admonitions of our fair correspondent. Of his own experience M. Migne says: "When we began the editing of our lectures on analytical mechanics, we used snuff to excess, taking 20 to 30 grammes per day, incessantly having recourse to the fatal box and snuffing up the dangerous stimulant. The effect of it was, on the one hand, the stiffening of the nervous system, which we could not account for; on the other hand, a rapid loss of memory, not only of the present but of the past. We had learned several languages by their roots, and our memory was often at a loss for a word. Frightened at this considerable loss, we resolved in September, 1861, to renounce the use of snuff and cigars forever. This resolution was the beginning of a veritable restoration to health and spirits, and our memory recovered all its sensibility and force."

The *News* adds that "the same thing happened to M. Dubrunfaut, the celebrated chemist, in renouncing the use of tobacco."

It is sometimes said that in this country every man attains whatever rank of position he aspires to and is qualified for. Young men should therefore carefully avoid everything which lowers or debases themselves in their own estimation. While tobacco stupefies the intellect and injures the health, we believe that every one who has become addicted to the habit must be conscious of a defilement, which, in a greater or less degree, unfits him for association with the neat and tidy. "One of the most painful recollections of my experience in the use of tobacco," said a friend to us, who had abandoned its use, "is that of the discovery of a growing preference on my part for those places and that company which tolerated and encouraged the indulgence of my vile habit." "Birds of a feather flock together," says the old adage. Our railroad managers, in fitting up the "Smoking Car" of their passenger trains with gaming facilities, recognize this principle of association,—a principle which no young man who indulges the weed should ever forget.

But aside from its injurious and debasing effects, what a miserably disgusting habit it is! Look at the spittoons of our public houses, at the puddles in our ears and steamboats! Think where all this offensive liquid comes from, and if you must, why then, continue to

"Smoke—puff—spit—spurt,"

But pray do it in some place and in some way that will incommode as few of your fellow beings as possible.

We must close this "Extract and Reply," with an extract from the "Musings of a Fond Mother," recently contributed to the *Vermont Record*. After detailing the accomplishments of her "blessed boy" in the graceful use of "the weed" in all its forms, this fond mother proceeds:—

Already his face begins to wear
A beautiful sallow hue;
And soon I expect to see his nerves
Shake as his father's do:
Puff—munch—spit—spurt—
A promising lad is our Mandelbert!

O, how I wish it would do for *me*
To learn to smoke and chew!
It looks so nice, it smells so sweet—
The cigar and Honey-Dew!
Smoke—chew—spit—spurt—
I wish *I* could do it like Mandelbert!

But then—I can look at my darling boy,
And *smell* his daddy dear,
And see the rich tints of the Honey-Dew
On the stove and the carpet right here!
Fume—stain—spit—spurt—
A blessed boy is my Mandelbert!

SUBSTITUTE FOR BEE-BREAD NOT YET FOUND.

I am much obliged to your correspondents "Selrahc" and H. Alley, for their suggestions, but fear that the remedy is not yet found. Bees will not use rye meal when there are blossoms within their range; neither will they carry in saw-dust except at such times as they will rye meal. Now is sawdust a substitute for pollen? or why will they gather it and take it into their hives? In the spring of 1866 our bees were in very good condition with a good supply of honey and a good number of bees in each stock. They commenced work early in the season, and thus gave promise of doing well. Soon after they began their work, combined circumstances deprived them of their usual supplies and in autumn they had less food in their hives than when they were put out in the spring. The result was, a large loss, not from the want of honey, not from the ill-construction of the hives, but from the lack of bee-bread, as I am still inclined to think.

I believe it was in the autumn of 1859 that I was at Mr. Quinby's, a hive containing bees, near his door. On inquiry I learned that they were to be "brimstoned," being of no value to unite with another swarm or to be kept by themselves, because they were *old*. During the latter part of the season, the swarm had been queenless, consequently no bees had been reared, and ere another working season those bees would die of old age.

Twice our bees have failed to rear brood in the latter part of the season, and in midwinter before they can be fed with rye meal, saw-dust, or any-

thing else, in the open air, they die. I think Mr. Alley will admit that if bees will live as long as the honey lasts brood will not be reared without "bread."

Supposing all the rye meal was fed in spring that could be of any use; and suppose, again, that the old stocks would put in enough of it to last them until another spring, what are the young swarms to do for pollen when the usual supplies fail? Since we cannot feed rye meal at any time but in early spring, (at, least I am not aware that we can,) we want a substitute for pollen that may be fed to them at any time when honey can,—in early spring, summer, autumn, or midwinter. Without it, we are unable to preserve many swarms in seasons of scarcity. F.

Mast Yard, N. H., Sept. 1, 1867.

VALUATION FOR TAXATION.

We have received from a subscriber in Westfield, Mass., a communication in which he complains that the assessors of the various towns and cities in the State, instead of taxing property at its fair cash value, as required by their oaths of office, seem to have fallen into the false notion that the city or town that can make the lowest return, and thus cheat the most, is doing a nice thing, and favoring the tax-payers. The conscientious assessor who wishes to discharge his duties in accordance with the plain letter of the law, and his oath of office, is told by the large property holders, that if he puts in the property at a fair cash value, his city or town will have to pay more than its share of the State and county tax; for, say they, other cities and towns do not assess their property for more than one-half its value. The small estates of the farmer and the mechanic, says our correspondent, are generally taxed at about their real value, and why should the man who puts his money into expensive dwellings, or business blocks, or factories, claim exemption from the demands of the law? This subject should be agitated, until assessors are made to feel the disgrace if not the penalty of falsifying their oaths to please dishonest tax-payers.

COMPOST OF LIME AND MUCK—SUPERPHOSPHATE—LIME AND WOOD ASHES.

I wish to inquire what quantity of lime should be used in composting muck, to broadcast on grass ground or on land intended for grain. I have used Coe's phosphate of lime on corn, at the rate of about one hundred pounds per acre, and have received great benefit from its application. Would more be advisable, where it costs $3.50 per 100 lbs., by the barrel? I would also like to know if phosphate of lime and wood ashes or common lime sown broadcast on wheat land would make a good dressing. HENRY HUMPHREY.

Corinth, Vt., Aug. 25, 1867.

REMARKS.—Any quantity of lime, from five to twenty-five bushels, or more, per acre, would do no harm. The limit, it seems to us, must be determined by the *cost of the lime*, as, if you use it, you wish to use it *profitably*. Five bushels of lime to one cord; that is, 100 bushels of peat, would make a top-dressing that would be sensibly felt. That would make four loads of about twenty-six bushels each. You would be likely to use at least eight such loads per acre, and that would require ten bushels of lime. We think it better to use lime moderately and often, rather than to apply a large quantity at once.

Question 2. If the land is good, and liberally manured, your practice of using a small quantity in the hills, for the purpose we suppose of giving the corn an early and vigorous start, is just what we should recommend.

Question 3. Either of the articles which you enumerate would make an excellent dressing for wheat, and would tend greatly to secure a crop. The ashes or lime would probably be the cheapest, and, perhaps, the most sure.

CROPS IN MIDDLESEX COUNTY, MASS.

We have lost considerable here from too much moisture. Potatoes rot badly; squash in most cases a failure; meadow grass in many places not cut; mildew on the leaves of shrubs and fruit trees common. Apples are more plentiful than last year, but not a quarter crop. Pears blighted in leaf and fruit; grapes badly mildewed in leaf, and some in fruit. The northeast rains seemed to injure the grape leaves very much.

My Concord vines in fruit have a very heavy crop of fine grapes, and with the exception of a few bunches, are free from mildew; so of my Hartford Prolific vines. Adirondac, Allen's Hybrid, Underhill's Seedling, Roger's Hybrids, Nos. 3, 4, 15, 19, Iona, Creveling, Diana, Isabella and every variety I have, both standard vines and nursery stock, have been injured by mildew in the leaf to some extent, except the Concords in the nursery. The new growth is good and free from disease, and I shall probably lose neither fruit nor vine. The Concord, and Hartfords, and Isabella, are as vigorous as ever, and promise a large yield of fruit.

JOHN FLEMING.

Sherborn, Mass., Sept. 9, 1867.

AN EXPERT BERRY-PICKER.

The berry-pickers, comprising both young and old, have become a numerous and respectable body, and among them are not a few of your fair and intelligent readers. Why should not some record of their successful labors find a place in your columns. We were favored with an accurate account of berries picked by Miss Ellen M. Wellington, of Ashby, in 1865, which we think it would be hard to beat, though we were told by the young lady herself that she could have done even better had she really tried. In one day she picked thirty-eight quarts of blueberries; the next day sixty quarts and a pint. These were sold at the door for four cents per quart. In July, the same year, she picked 583 quarts of blueberries and whortleberries in twenty-three days which were sold at the door for $37.37. She picked in all, that year, thirty-two bushels and twelve quarts, which were sold to the collectors for $72.02. The next year, 1866, she picked and sold, as before, whortleberries and blueberries to the amount of $50.25 W.

Sept. 7, 1860.

SWEET TOMATO PICKLE.

Will you please reprint for the benefit of your readers the following, which I have found by repeated trials to be the best receipt of the kind that has yet met my notice.

Slice one gallon of green tomatoes, and put a handful of salt to each layer of tomatoes. Let them stand twelve hours, then drain off the liquor, and add to them two green peppers, and from two to four onions sliced. Take two quarts strong

cider vinegar, a little more than one-half pint of molasses, and two tablespoonfuls of whole mustard, and a teaspoonful of allspice, same of cloves, and heat until it begins to boil. Then put in tomatoes, onions and peppers, and let them boil ten minutes. Pour them into a stone jar and seal tight, and put them in a cool place for a fortnight; after which they will be ready for use and will keep a year without scalding. OUTIS.

A COMPLIMENT TO THE FARMER FROM MAINE.

I send enclosed two dollars and fifty cents for your paper one year, in advance. I am the oldest subscriber there is about here, and without boasting, may say that I have done more to extend the circulation of the FARMER than any man in town.

The NEW ENGLAND FARMER is the best paper for farmers that was ever sent into this State. I manage all of my farming and trading by its suggestions, and would not do without it for $50 per year.

Anson, Me., Aug. 23, 1867.

CURE FOR STIFLE.

Take white of one egg, one table spoonful honey, one table spoonful fine salt, beat well together, adding tea spoonful spirits of turpentine. Then rub on thoroughly, and dry in with a hot shovel.

HIRAM C. DRIGGS.

Bradford, Vt., Sept. 9, 1867.

GRAFTING GRAPE VINES.

Your "New Subscriber" of Campello, inquires about grafting grape vines, and you wish correspondents to say something to meet his case. If the following is considered of use to him you may print it.

The fruit growers of this neighborhood do not succeed well in grafting the vine, and consider it cheaper to buy large, two or three year old vines of the variety desired. The sap of the vine flows so rapidly immediately after the frost leaves the ground in the spring, that in most, or nearly all cases, the scion fails to unite with the stock, and soon perishes. The most likely way to succeed is to graft in the fall, as early as possible. Expose the crown of the root, cut off the vine two inches above, and "cleft graft" as we do an apple tree; use a scion with two buds, and cover up with soil to an inch above the first bud. Just before the ground freezes up place an old box or large flower pot over it, and then soil and straw sufficient to prevent the scion from freezing, and by spring, in most cases, the union will be complete, or sufficiently so to prevent the death of the scion by the flowing of the sap in spring. JOHN FLEMING.

Sherborn, Mass., Sept. 9, 1867.

SALT AND LIME FOR HAY.

I have put in several tons of hay on the Metcalf plan this season, and have also been informed that the Shakers of Enfield, N. H., put in a barnful last year with the lime alone, and that their hay came out bright and nice. H. H.

Corinth, Vt., Aug. 25, 1867.

RINGING APPLE TREES.

The accounts published in the FARMER last spring of the result of ringing apple trees, induced me to try the experiment on a young, thrifty tree that never had borne but one apple, although it had blossomed full several years. The bark was removed when in full blossom 2¼ inches in length around one limb that was one inch in diameter. The result is that there now are about fifty apples on that limb, and only two on the whole of the rest of the tree. Seeing that Mr. A. H. Wheeler, of the Concord Club, is cutting down his orchard because of its unfruitfulness, I would recommend the experiment to his consideration.

AN APOLOGY FOR A FARMER.

Wardsboro', Vt., Aug. 15, 1867.

SOWING SPRING GRAIN IN THE FALL.

Is there any kind of spring grain that can be put into the ground in the fall of the year, and bring a crop that will be profitable? If so, please inform me what it is and when to sow it.

Roxbury, Vt., 1867. YOUNG FARMER.

REMARKS.—Spring rye or spring wheat may be made to become fall rye or fall wheat, by continually sowing the products of the same seed in the fall, but the crop would not at once be profitable. It would have to go through a *change of habit* before a paying crop would be produced. That is, there would be no change in the nature of the plant, but only in its habits.

IMPLEMENT TRIAL AT UTICA.

The trial which was commenced at Utica on the 11th of September, was an adjournment from that held last spring in the rainy week. The following are the entries, then made:—

Plows.

Class 1.—A sod plow for stiff soils. F. F. Holbrook, Boston.

Class 2.—A plow for stubble land in stiff soils. F. F. Holbrook, Boston, and Collins & Co., N. Y.

Class 3.—A sod plow for sandy soils and light loams. A. L. Bradley & Co., Trenton, N. J.; F. F. Holbrook, Boston, Mass.

Class 4.—A plow for stubble land, which will cut a furrow twelve inches deep, with three horses, which will raise the lowest soil to the surface of the furrow. F. F. Holbrook, and Collins & Co.

Class 5.—A Michigan soil and trench plow. F. F. Holbrook, Boston.

Class 6.—A sub-soil plow in connection with an ordinary plow. R. J. Wheatley, Duquoin, Ill.

Class 7.—A ditching plow for opening drains A. P. Routt, Somerset, Va.

Class 8.—A machine for excavating ditches for underdraining. E. Heath, Flowerville, N. Y.

Class 9.—A steel plow for alluvial and unctuous lands. Collins & Co.

Class 10.—A swing or side-hill plow. F. F. Holbrook, Boston, and L. D. Burch, Sherburne.

Harrows and Cultivators.

Wm. H. Burtis & Co., Watertown, N. Y., one in each class; J. E. Morgan, Deerfield, one; Fowlard House, Oneonta, N. Y., two-horse Cultivator; N. Nishwitz, Williamsburg, N. Y., Pulverizing Harrow; N. Houks, Appleton, Maine, one-horse Cultivator; Brown, Seirberling & Co., Massilon, Ohio, a Shovel Plow and Cultivator combined; F. F. Holbrook, Boston, Mass., a Cultivator; Alden & Co., Auburn, N. Y., Cultivator.

The small number of entries, and the comparatively little interest which the trial excited is accounted for by the correspondent of the *Country Gentleman* on the assumption that "a very small portion of the numerous excellent plows, now made throughout the country, are patented; and the manufacturers would derive but little benefit from premiums, as the higher

the commendation, the more numerous would become the imitators, without any protection to the original devisors and makers," while others see in the strictness of the rules of the managers, and the severity and thoroughness of the test proposed, a reason why so few manufacturers were willing to enter their implements. This trial, though under the charge of the New York State Agricultural Society, was open to all implement makers in the country. The judges who were present were John Stanton Gould, of Hudson, Chairman; Prof. B. Pierce, of Harvard University; E. R. Potter, of Kingston, R. I.; Peter Crispell, Kingston, N. Y.; H. Waterman, Hudson; George Geddes, Syracuse, and J. McGraw, Dryden, N. Y.; Hon. Sanford Howard, of Michigan, together with President Patrick and Secretary Johnson.

We make the following extracts from the report of "J. J. T." the correspondent, of the *Country Gentleman*, who personally witnessed the trial:—

The swivel plow, for side-hill as well as level ground, from F. F. Holbrook of Boston, was submitted to a severe test on a piece of hard and gravelly land, with a stony undersoil. Although subjected to this difficult test, it proved itself greatly superior to the old swivel plows, effecting a complete inversion of the sod, and doing fair work. Burch's swivel plow, from Chenango county, and known as the Chenango Clipper, was tested briefly, and appears also to do fair work. The swivel plow of C. W. Sykes, Suffield, Conn., entered only for exhibition, quite different in construction from other reversible plows, attracted much attention.

In addition to the preceding, the following plows were tried on these grounds: Holbrook's Universal plow, from F. F. Holbrook, Boston, as "a sod and subsoil" plow, like the double Michigan; Holbrook's plow for lapping furrows; the steel plow of W. Whateley, Springfield, Ohio; a plow cast from cast steel, from Collins & Co., New York, and made at Hartford, Conn., known as the Smith plow; the Mohawk valley clipper, from Remington & Co., Ilion; and R. J. Whateley's subsoil plow, from Illinois.

Holbrook's double mould-board, or sod and subsoil plow, cut a furrow in very hard ground, about ten or eleven inches deep, with four horses attached, throwing the sod completely under, and piling the mellow subsoil on the top. Its operation gave much satisfaction. Holbrook's lapping plow did good work, and was found, on holding, to be remarkably capable of being perfectly guided, so that a practiced hand might control it with much precision. The three steel plows from Collins & Co., W. Whateley, and the Remingtons, all did handsome work—the latter especially appeared to be much commended by the farmers present.

On the second day of the trial (the 12th) the plows were tried in what was termed stubble ground. A crop of rye had been cut from the ground; and a dense growth of grass and weeds covered the whole surface, in many places from one to two feet high. Very few plows could therefore be expected to turn under this heavy growth. All those tried here did creditable work, although most of them failed to effect a complete burying of the herbage. Holbrook's sod and subsoiler, used the previous day, but with the forward or smaller mould-board removed, and drawn by two horses, ran 11 inches deep, and threw out from the bottom of the furrow earth that had never before seen the light, covering all the grass and weeds with scarcely an exception.

Smith's cast steel plow, (from Collins & Co., New York,) designated as B No. 14, did handsome work, running 9 inches deep, and covering the grass with a little exception. Holbrook's plow No. 66 did about the same. The work of the others was less perfect, although on more favorable ground, their performance would have been nearly unexceptionable. The performance of W. Whateley's steel plow excited much commendation from most of the spectators.

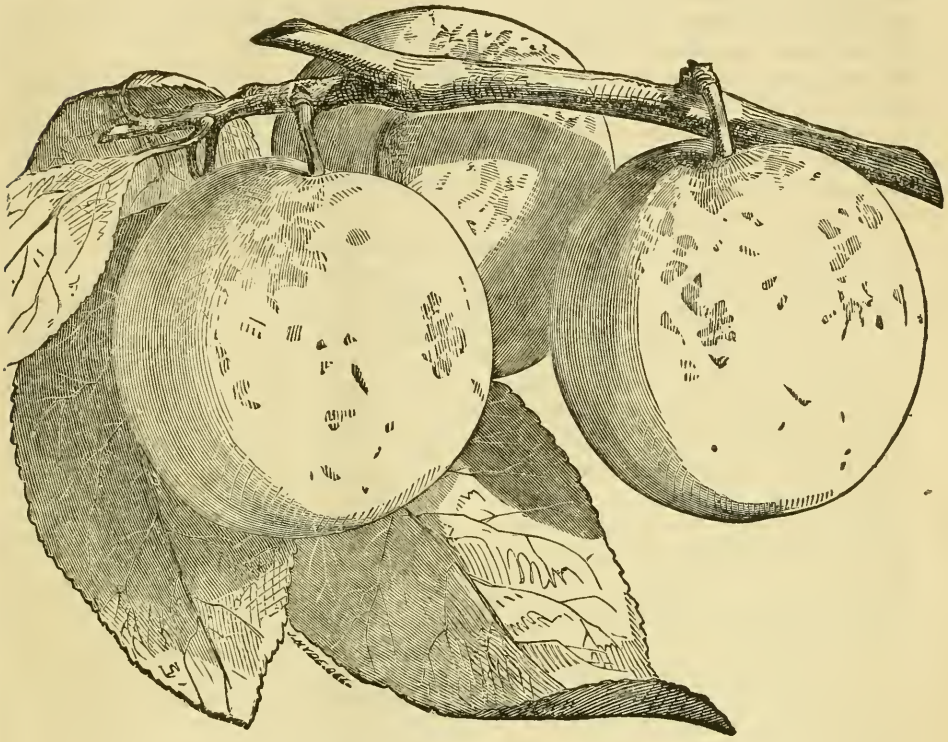
There were some fine implements in the class of Harrows and Cultivators.

Grapes on Elms.—At the winter meeting of the Illinois State Horticultural Society, the Hon. John B. Turner, a successful grape grower, during a discussion on the grape, advocated the growing of grapes on elms. He said:

"When, years ago, I taught Latin to boys, we used to read of the ancients letting their grape vines clamber on elms, but I thought little of the statement, as a practical suggestion. But I find that I cannot keep my vines out of the elms. If I plant near an elm the vine goes up into it. I have one vine that, despite my remonstrances, insists on going into the top of one of my elms. From it I sold, during the past year, $100 worth of grapes. I am therefore tolerably well satisfied with its wilfulness; for these grapes did not cost me a cent for culture or care. I am now planting live stakes in my orchard; and elm stakes they are. Such stakes will save the annual cost of training and pruning, and judging from my experience, they will insure fruitfulness."

Over-Eating Apples, or Repletion.—When this occurs, give the animal a lump of saleratus of the size of a common apple, dissolved in warm water. It is said to give almost *instantaneous* relief.

—At a late meeting of the Pennsylvania Horticultural Society, statements were made, showing the injurious effect of the air of gas-lighted rooms on the health of growing house-plants, and on the preservation of cut flowers. In reply to the remark of a member that the injury resulted rather from the dry air of furnace heat than from the effect of gas, Mr. Meehan gave instances which had come under his observation in Germantown, of people noted for their success in window culture, under the old state of things, who had failed after introducing gas, although no change had been made in their old fashioned heating arrangements.



THE WASHINGTON PLUM.

The origin of this excellent plum is somewhat remarkable. The original tree sprung up in the city of New York, on what was known as the Delancey farm, on the east side of the Bowery. Without waiting to judge of the tree by its fruit, it was grafted to some common variety. As if conscious of its innate superiority, it threw up a sucker from its natural root, which was transplanted and cared for by a Mr. Bolmar, a merchant of Chatham Street. As it came into bearing about 1818, the remarkable beauty and size of the fruit attracted universal attention. In 1821 this fruit was sent to the Horticultural Society of London, by the late Dr. Hosack, and it is now considered one of the best plums in most European countries.

Downing says the Washington has remarkably large, broad, crumpled and glossy foliage, is a strong grower, and forms a handsome round head. Like several other varieties of plum, the fruit of this, especially in sandy soil, does not attain its full perfection until the tree has borne for several years. We have measured them very often six inches in circumference, and once from Mr. Bolmar's original tree, seven and a quarter inches.

Wood, light brown, downy. Fruit of the largest size, roundish oval, with an obscure suture, except near the stalk. Skin dull yellow, with faint marblings of green, but when well ripened, deep yellow with a pale crimson blush or dots. Stalk scarcely three-fourths of an inch long, a little downy, set in a shallow, wide hollow. Flesh yellow, firm, very sweet and luscious, separating freely from the stone. Stone pointed at each end. Ripens from about the middle to the last of August.

PRESERVING PEACH STONES.

The first care is to see that they do not get dry while collecting them. In order to do this, set any old box that will hold a peck, in the shade of the house or a tree, and as fast as the stones are collected throw them into the box and add a handful of moist soil. Before the ground freezes, sink the box three or four inches into the ground and cover it over with earth to the depth of six inches, and let it remain till spring.

As soon as the ground is sufficiently dry in April to fall to pieces readily when stirred, take up the stones and plant them. Many of the stones will be found with sprouts sticking out, and need no cracking, but those that are not sprouted should be *carefully cracked* before they are planted. Place the stones in shallow furrows and cover them with one inch of soil. Place the stones about two feet apart so as to allow ample room for budding them when they are ready for it.

If the spot where they are planted is a dry one, or if the season proves dry, it will be well to cover the rows with boards, set up an inch from the ground, so as to keep it moist until the young plants appear.

WEEVILS IN GRANARIES.

Some years since, accident discovered to a French farmer a very simple and efficient method of preventing, or rather destroying, this insidious pest in corn and grain houses.

Happening to deposit, in one corner of a building in which there was stored a quantity of grain, a few sheep skins from which the wool had not been pulled, he found, upon examining them a few days after, that they were literally covered with dead weevils. The experiment was repeated, and always with the same result.

On stirring the corn, (wheat, probably,) he was surprised to find that although previously infested to a degree that forbid all hope of saving it from immediate destruction by this pertinacious foe, not a single insect was to be found among it. The experiment is certainly worth trying. Instead of the sheep skins, which are quite valuable, we might substitute those of the woodchuck, who is increasing to an inconvenient and expensive extent. What killed the weevils, whether the fatty matter on the skin, or something else, we have not been able to learn. At any rate, let us try the woodchuck skins.

For the New England Farmer.

NOTES FROM CHESHIRE COUNTY, N. H.

Agreeably to former practice, I send you some notes from the immediate vicinity of Grand Monadnoc, that the readers of the Farmer, in other sections, may compare notes with us in relation to weather, crops, &c. The season thus far has been peculiarly a wet one. So dissimilar to the last two seasons, as to give us a wide range of observation upon the extremes of weather, and its varied effects upon the several kinds of vegetable production.

The summers of 1865 and 1866, were extremely dry, with very little snow the following winters, which enabled the frost to enter deep into the ground, holding the entire amount of the circulating fluids of vegetation in its icy grasp, which is always attended with serious injury. This can only be avoided by heavy mulching. If there is but one thing that demands to be hard pressed upon the attention of fruit growers in this section of country, it is that of mulching. By the lessons of the past, I have been led to believe that there is nothing connected with the science of pomology, so essential to success as this. It provides or furnishes all the requisites of a good crop of manure, by maintaining an equilibrium of temperature in the soil, guarding against the injurious effects of drought in summer, and frost in winter; it prevents the premature dropping of fruit, and of the leaves which are necessary for the preservation and maturity of the fruit buds for another season's crop.

The apple crop of this season is quite small, the Baldwin being the only variety which is bearing to any extent. Pear trees are generally bearing well. The Bartlett, Beurre Superfin, and Louise Bonne de Jersey seem to be at home in our soil, and bear to a fault. Should the Superfin continue as it has began, it must stand at the head of field pears. It has but one fault—a tendency to overload. Of five varieties of grapes all have mildewed badly but the Monadnoc, (a seedling—fragrant,) and Delaware. The Clinton seems the worst. The Delaware is the grape for this section; it is hardy, grows steady, bears early and abundantly, and ripens its fruit. It is now, (Sept. 23,) nearly ripe. All kinds of wild berries in abundance. The blackberry crop was remarkably fine, and in view of the scarcity of the apple crop, large quantities have been preserved.

The hay crop is very heavy—the largest for many years. A fine second crop is now being gathered. Notwithstanding this bountiful crop, it becomes farmers to secure every pound of fodder possible, for our barns for many years have not been so clean of hay as at the commencement of the present hay season. The corn crop is looking well, and out of the reach

of frost. The frost on the morning of the 15th inst., killed vines and other tender plants, but did but little injury otherwise. Wheat, rye, oats and barley, have made a heavy growth of straw, but not above the average of kernel. Fields newly seeded to grass look finely—having set thick and strong. Early varieties of potatoes are rotting badly, but I think the crop of later varieties will be very good. Beans and peas have blasted badly, and the crop here must be very light. The hay and English grains have been well secured.

The time has come when *farming pays*. The long mooted question needs no further argument. So long as hay shall bring from $20 to $30 per ton, beef $8 to $10 on the hoof, and corn, rye, wheat, oats, barley and potatoes, all kinds of fruit and garden vegetables, with butter and cheese, remain at ruling prices, there can be no safer or better business than farming. L. L. P.

East Jaffrey, N. H., Sept. 23, 1867.

Remarks.—We wish to call attention to the remarks of our correspondent in relation to the importance of mulching fruit trees, in connection with the practice of Capt. Pierce, of Arlington, Mass., detailed in another column.

For the New England Farmer.

THE GARDEN IN OCTOBER.

The time for cessation of active labor in the garden for the season is near at hand, and may be suddenly terminated, so far as to its furnishing fresh vegetables, &c. Owing to the excessively wet and unusually cool and damp season, our garden has not given the satisfaction in respect to some kinds of vegetables and fruits we hoped for when we planted in the spring; yet, on the whole, we have little to complain of. What though the squash falls short of the usual abundant supply, or the plum and cherry failed, or a few grapes were belated in ripening, have we not a good supply of most other vegetables, and the different varieties of small fruits, sufficient for present use, and a supply laid away for winter?

Besides gathering and properly storing such of the crops as cannot be used or marketed before hard frosts, there is much that may be done to enhance another year's profit. Let us then keep good heart and go at it with a will, endeavoring to remedy any failures of the present season. Unquestionably, by superior watchfulness, and better, and more thorough preparation and culture, much of the want of success in a bad season might be overcome. Heavy soils may be much ameliorated by fall ploughing, throwing into ridges so that the frosts, &c., of a winter's season may act to pulverize and fine them. Perhaps some portions of the garden may need underdraining; the heavy rains and great amount of waterfall of the past season, will have shown any portions where drainage is necessary. If possible to carry off any surplus water by drains, let it be done this fall, without risking the results of another year. The good effects of manure are not fully received when the soil is saturated with water, neither will plants grow as freely when the soil is wet or water comes near the surface. The evaporation which is constantly going on from a wet soil, tends to lower the temperature and retard growth. Wet ground cannot be worked as early in the spring, and is sooner affected by frosts in the fall, than dry. Continue the work described for September; some of which is equally applicable to October.

Asparagus.—If new beds are desired, and plants are at hand, they may now be made. The best results are had where the ground is worked *deep, and well filled* with manure. Set the plants three inches below the surface, not less than one foot apart each way. Old beds may have the tops cut off and cleared, and a liberal coat of coarse manure spread over the bed the last of the month, or before the ground freezes hard in November

Beets.—Pull at the approach of frost, and cut off the tops, not too close, and dry a little in the sun, then place them in the cellar and pack in sand or earth to keep them fresh and good for winter.

Blackberries.—Muck, leaf mold, or well decomposed composted manure can be applied to the soil around the roots to advantage, and will increase the fruitfulness of another season.

Currants and Gooseberries.—Now is the time to make cuttings and plant to increase the plantations. Select well ripened wood of the last growth, and cut them about a foot long, and if you wish to grow them in tree form, cut out, with a sharp knife, all the eyes except two or three at the top, and set them in the ground even, with the lower eye left on; fill in and press the soil closely around the lower end, as upon the thoroughness of this in a great measure depends the success of growing cuttings of any kind. If a bush form is desired instead, the buds may be left on. Cut square off close below a bud in making cuttings. After planting, cover with a coat of leaves or the like.

Cabbage.—Plants sown this fall for early spring planting, may be transplanted into cold frames. Set them deep, down to their leaves in the soil, as the stem is the most tender part; set thus, and watered, they will need no outside covering till near the end of November. The late heading kinds may be left till hard frosts, without injury, before gathering.

Carrots.—Harvest before severe frosts, as they are rather sensitive to cold, and preserve as directed for beets. The tops may be fed to cows or other stock with advantage.

Herbs.—Gather and preserve such as have not already been gathered.

Mushrooms.—This is a production of growing importance in certain localities; being

much sought for by a class of epicures fond of rare dishes. They are somewhat particular as to their growth and treatment. Now is a good time to construct the proper beds. The details of making the beds and growing the mushroom is too lengthy for these notes, and is merely alluded to as a reminder.

Continue to do all seasonable work, gathering crops, seeds, &c., preparatory for winter, and to advance or lessen the spring's work.

WM. H. WHITE.

South Windsor, Conn., Sept. 26, 1867.

BEST ORCHARD IN MASSACHUSETTS.

Having heard much of Capt. George Pierce's orchard, in Arlington, we took occasion to visit it on Thursday week. Its area is about five acres, and comprises about 200 trees. The ground is under cultivation,—squashes, cauliflowers and other vegetables being grown among the trees. Capt. Pierce does not believe in growing grass in orchards, nor weeds, but holds to the thorough tillage thereof. His squash crop last year was some twenty tons on the part of the orchard thus used. The crop is less bountiful this year than last, but will, probably, net him as much money, as they sell much higher than they did last year. He plants his squash hills twelve feet apart each way. He thinks his squash crop about as good as if there were no trees. The trees of the younger portion of the orchard are thirty-six feet apart, and the older, forty or more.

Mulching is practiced by Capt. Pierce, as relates to his bearing trees; and such is his faith in this, that he said he should do it, did his swamp hay thus used cost him $40 a ton; it cost him this year about $15, hay being scarce and high. His mulch cost him $80 this season. After the fruit is gathered, the mulch remaining undecomposed is gathered and saved for another year; but if too far gone for this, it is spaded under. He applied it about the first of July this season. It serves to keep the weeds in check and furnishes a nice clean bed for the apples to drop upon, thus preventing bruising, and keeping them as clean as while hanging upon the trees.

The *Williams Apple* (Williams' Favorite, Early Red) is his leading early variety, of which he has 38 trees, from which he has gathered and sold over 200 bushels this season, a few more still remaining on the trees, 7 bushels having been gathered on the morning of the day we visited the captain. They sold for $6 a bushel, the highest this year, and last year the highest brought him $8 a bushel. He regards this as the very best market apple known at present, for the season at which it ripens.

As they ripen and fall, they are picked every morning, sorted, boxed and sent to market on the following morning. The greatest amount gathered on any one day was 15 bushels. Capt. Pierce's Williams sell higher in market than others of the same variety, for, owing to his method of pruning, they are larger and more highly colored.

The Porter. His next market variety for the season is the Porter.

Baldwin Apple. Of this variety Capt. Pierce has the most remarkable show we have ever seen. The Baldwin and Porter are of the older portion of the orchard, and the trees are much larger than his Williams are, as the latter were grafted on to the former. The Baldwin trees are very heavily fruited, most extraordinarily so. It is estimated that one tree will produce, some say—and they are apple buyers and know what they are talking about,—from 20 to 25 barrels; and there are other trees not far behind this in production. The former tree, according to our pacing, is some 50 feet from the extreme terminus of the limbs on one side to that of the same on the opposite side. The tree's stem or trunk, from actual measurement near the ground, is 5½ feet in circumference, less than two feet in diameter. While the complaint was often heard in the early part of the season, that apples fell prematurely, Capt. Pierce says, "too many of mine hang on the trees."

Among his miscellaneous varieties are the Gravenstein, the River, the Sour Bough, Hubbardston Nonsuch, Northern Spy, Wine Apple, with some others not recollected. But as seen, Captain Pierce devotes his attention to the growing of the leading, because the most popular, varieties of market apples. It would be hard to name three other varieties of the apple which net so good returns as Captain Pierce's three leading sorts, the Williams, the Porter, and the Baldwin.

Pruning Apple Trees. Captain Pierce stated that he prunes about the last of May or first of June, he having satisfied himself that where limbs or branchlets are to be cut off, there is no other period of the year so favorable as this; where much wood is to be removed he does this when there is no crops growing on the ground, cutting off the limbs with a saw, about six inches or so from where they are to be cut again at the season for healing over or growing over. The fitness of this practice is clearly confirmed by the observation of all who visit his orchard.

The Form of the Trees his pruning has given is particularly noteworthy. Having alluded to the splendid coloring of his Williams, it is owing, he said, to my pruning, so as to let in the sun. His Williams trees, we neglected to say, bear every year.

In conclusion, we asked Captain Pierce, How is it that your trees are over-fruited, as it were, while almost everybody else complains that he has no fruit, though plenty of bloom? Said the sage orchardist: "I prepare and till my ground well, keep off and destroy caterpillars, canker-worms, web-worms, prune my trees myself, &c. It is no matter what I am

doing, if web-worms or caterpillars are manifested from tent or web, I go and destroy them forthwith; in brief, I comply with all the conditions, so far as I know them, of a good apple crop, and I get one annually, while my neighbors, failing to do so, have become discouraged and are and have been digging up their trees." Is he not right, reader? Is it not just as impossible for apple trees to make fruit without suitable culture and plant food, as it is for a cow to make a good mess of milk without plenty of good and suitable feed?—*Boston Cultivator, abr.*

HINTS ON MAKING GOOD BUTTER.

Mrs. N. Noman, of Adrian, Michigan, furnishes the following sensible directions and cautions in respect to the management of milk, cream and butter, in a letter addressed to the New York Farmers' Club:—

Set your milk where the wind will not blow on it, for the wind dries the cream, and dried cream will not make butter. In warm weather keep your cream still, for if you want your cream to become sour stir it often. Very sour cream will not produce a good quality of butter. In cool or cold weather, don't think that you must let your milk set until it is sour before you take off the cream. Forty-eight hours is sufficient time for milk to produce all the cream it is capable of producing. In a right temperature it will rise in less time. Much poor butter is the result of bad management of the cream. It is a good plan in warm weather to save strippings, about a quart night and morning from each cow, and churn every day. Churn your cream as cool as possible in warm weather. Much butter is spoiled by churning the cream too warm. If your butter comes rather warm, put in twice the salt you usually do, work your butter just enough to mix the salt well through it, and set it away in a cool place for twenty-four hours, then take it up and work it over. Much of the salt will be dissolved and will work out. Thoroughly cleanse your butter with salt. Use no cold water about your butter, for you cannot cleanse butter or any other lump of grease with water. Some women talk as though butter was not fit to eat unless it is first washed with cold water. If butter is not fit to eat without being washed with water, it is not by being washed. Water always damages butter. Butter that is washed with water is not fit to pack, for it will not keep. When the brine that oozes from your butter as you work it is clear, that is, clear from milk—it is worked enough—don't give it another stroke, except to get it into shape. Pack your butter in perfectly clean vessels, and keep it well covered with strong brine. When you use your butter set it on the table just as you cut it out of the tub, for it is injured if worked after it has been packed.

THE FIRE ON THE HEARTH.

BY MRS. FRANCES DANA GAGE.

There is a luxury rare in the carpet of Brussels,
And splendor in pictures that hang on the wall,
And grace in the curtain, with rainbow-hued tassels,
And brilliance in gas-light, that flashes o'er all;
But give me the glow of the bright-blazing fire,
That sparkles and snaps as it echoes your mirth,
And leaps, in its joy, up the chimney still higher,
When the cold winds without make us draw near the hearth;
The old-fashioned fire, the cheerful wood fire,
The maple-wood fire, that burns on the hearth.

As I feel its warm glow, I remember my childhood,
And the circle of loved ones that drew round our board;
The winter eve sports, with the nuts from the wild-wood,
The apples and cider from cellars well stored;
I hear in its roar the wild shout of my brothers,
And the laugh of my sisters, in innocent mirth,
And the voice of my sire, as he reads to my mother,
Who knits by the firelight that glows from the hearth;
The old open fire, the health-giving fire,
The home-cheering fire that glows on the hearth.

Like the strong and true-hearted, it warms its surroundings,
The jamb and the mantle, the hearth-stone and wall,
And over the household gives out its aboundings,
Till a rose-tinted radiance is spread over all.
If you lay on the fuel, it never burns brightly,
Till the day's work is done, and we lay by our mirth;
Then we gather the embers and bury them lightly,
At morn to renew the fresh fire on the hearth—
The old fashioned fire, the life-giving fire,
The broad-glowing fire that burns on the hearth.

It reminds us of friends that we draw to the nearer,
When winds of misfortune blow heavy and chill,
And feel with each blast, they are warmer and dearer,
And ready to help us and comfort us still—
Friends that never grow cold till the long day is ended,
And the ashes are laid to their rest in the earth,
And the spirit, still glowing, to God hath ascended,
To rekindle new fires, like the coal on the hearth;
Then give me the fire, the fresh-glowing fire,
The bright open fire, that burns on the hearth.

You will tell me a *stove* heats a room in a minute,
Expels the cold air, and I know it is so;
But open a door, is there anything in it?—
Your warmth is all gone—there's not even a glow;
Just like modern friends, one is every day meeting,
All professions and smiles, as the impulse gives birth,
But as black and as cold, at the next hour of greeting,
As your stove that has banished the fire from the hearth;
Then give me the fire, the old-fashioned fire,
The bright-glowing fire, that burns on the hearth.

EXTRACTS AND REPLIES.

GARGET IN COWS.

It is about fifteen years since I commenced using saltpetre in case of garget, or swelled or caked bag. As soon as the disease shows itself, take one tablespoonful of saltpetre for a dose, which is to be administered three days in succession, and then wait a day or two, and if the cow is not relieved repeat the doses. In extreme cases the doses may require to be repeated three times. If this does not cure, you may as well turn the cow out to fat. If the cow will not drink it in slop nor eat it in meal or other mess, take a common sized potato, cut it in the middle, take out the inside, so that it will hold the dose, put the saltpetre into the cavity, put the halves together, and put it down among the cow's grinders and she will eat it readily. I have received four times the benefit from the above treatment than I ever did from any other. I have also dissolved the saltpetre in cold water, and rubbed the udder thoroughly with it. In ordinary

cases of caked bags, with cows or heifers, the bathing with saltpetre and cold water is as good as anything that can be done. O. FOSTER.

Tunbridge, Vt., Sept. 5, 1867.

CHEMICAL TERMS.

"Some knowledge of chemistry has now become a necessity to agriculturists;" and, notwithstanding the fair presumption, that only a small minority of your readers are conversant with vegetable physiology, or would be interested in its discussion, I, as a portion of the agricultural readers of your paper, am pleased to observe that you have admitted to your columns some articles on that most interesting branch of organic chemistry; and that you are now publishing elementary instruction for farmers, under the title of "Chemical Terms."

Good instructors are wont to encourage their pupils to ask questions, that they may the more readily remove the difficultics that are constantly presenting themselves to learners.

Emboldened by such considerations, I submit the following—quoting from an article in your issue of the 7th of September, inst.

"*Synthesis.*—It means to reconstruct, to reunite the separated elements."

Is not the putting together, in proper proportions, of the elements of a compound body, whether or not such elements have been previously united, *synthesis*? Is synthesis, necescarily, a *re*-construction, a *re*-union?

"*Solution.*—When a solid body is dissolved in a liquid, so as to become clear and transparent, it is called a solution. In this case the particles are so minutely divided that they are not perceptible by the eye." According to a strict grammatical rendering of the first part of this last quotation, the pronoun (*it*) represents "a solid body;" and the definition may be correct, when applied to many, and perhaps to a majority of soluble bodies; yet as a general definition, it conflicts with numerous facts.

Are not the various dyes, (before precipitation,) which are neither "clear" nor "transparent," true solutions of coloring matters? "The particles," as such, are undistinguishable both in the solid state, and in solution; but in colored solution, they are not, in the aggregate, invisible.

It appears to me that the definitions of chemical terms, found in our standard works, having passed the scrutiny of most eminent chemists, are not susceptible of much improvement at our hands, either in clearness or accuracy.

Please compare the following definition, from "Webster's Last Unabridged," with that which I have under consideration:

"*Solution.* Def 4.—The action of an attraction between one or more solids and a fluid when brought in contact, by which the former become themselves fluid, and are diffused through the latter without other change or loss of properties; the state of a body as thus diffused." I. B. HARTWELL.

Wilkinsonville, Mass., Sept. 13, 1867.

A SICK OX.

I have an ox who breathes heavily, and occasionally throws mucus from the nostrils. The first symptom of disease I noticed was a cough, which appeared in April last, and has continued to this time. I bound a bag of soap and salt on the head between the horns, and then tried spirits of turpentine every day for two weeks.

Is there such a thing as cattle having glanders?

Warwick, Mass., 1867. O. P.

REMARKS.—From the above description, we should think there was some obstruction in the nasal gland of the animal; some foreign substance introduced there which causes irritation, cough and mucus. Send for your physician to examine him if you have no veterinary practitioner near. At any rate do not apply violent remedies.

A BAD HUMOR IN A HORSE.

I would like information in regard to a disease in a horse which I bought somewhere about a year ago, which had been much heated by being driven too hard. He is now troubled by a humor which comes out all over the animal in small scabs, making it very uneasy by spells during each day, during which it rubs its mane and tail violently. Can you or any of your readers inform me how to get rid of the humor, and relieve the animal?

Sharon, Mass., Sept. 23, 1867. J. B.

REMARKS.—Although the disease in this case may be different from the mange, we think our correspondent will be interested by the following extracts from Youatt's description of that disorder and directions for its cure. Every case of itchiness of the skin, he says, should be regarded with suspicion, as the disease, which is similar to that of the itch in the human subject, affects most of our domestic animals.

"In an animal affected with mange, the cuticle and the hair fall off, and there is, as in obstinate surfeit, a bare spot covered with scurf—some fluid oozing from the skin beneath, and this changing to a scab, which likewise soon peels off, and leaves a wider spot. The mange generally first appears on the neck at the root of the mane, and its existence may be suspected even before the blotches appear, and when there is only considerable itchiness of the part, by the ease with which the short hair at the root of the mane is plucked out. From the neck it spreads upward to the head, or downward to the withers and back, and occasionally extends over the whole careass of the horse. Amidst the whole list of diseases to which the horse is exposed, there is not one more highly contagious than mange. If it once gets into a stable, it spreads through it, for the slightest contact seems to be sufficient for the communication of this noisome complaint. Mange has been said to originate in want of cleanliness in the management of the stable. The actual cause of mange, however, is the existence of a parasite burrowing in the skin. The name of the insect is *Acarus equi*, and is precisely analogous to the parasite producing the itch in man. Physic is the first step in the progress towards cure. There must also be some local application. That which is most effectual in curing the itch in the human being must form the basis of every local application for the cure of the mange in the horse. Sulphur is indispensable in every unguent for mange. It is the sheet anchor of the veterinary surgeon. In an early and not very acute state of mange, equal portions of sulphur, turpentine, and train-oil, gently but well rubbed on the part, will be applied with advantage. A tolerably stout brush, or even a currycomb, lightly applied, should be used, in

order to remove the dandriff or scurf, wherever there is any appearance of mange. After that, the horse should be washed with strong soap and water as far as the disease has extended; and, when he has been thoroughly dried, the ointment should be well rubbed in with the naked hand, or with a piece of flannel. More good will be done by a little of the ointment being well rubbed in, than by a great deal being merely smeared over the part. The rubbing should be daily repeated. During the application of the ointment, and as soon as the physic has set, an alterative ball or powder, similar to those recommended for the other affections of the skin, should be daily given. If, after some days have passed, no progress should appear to have been made, half a pound of sulphur should be well mixed with a pint of oil of tar, and the affected parts rubbed, as before. On every fifth or sixth day the ointment should be washed off with warm soap and water. The progress towards cure will thus be ascertained, and the skin will be cleansed, and its pores opened for the more effectual application of the ointment.

The horse should be well supplied with nourishing, but not stimulating food. As much green feed as he will eat should be given to him, or, what is far better, he should be turned out, if the weather is not too cold. It is necessary, however, to be assured that every mangy place has been anointed. It will be prudent to give two or three dressings after the horse has been apparently cured, and to continue the alteratives for ten days or a fortnight."

After a cure has been effected, the blankets, harness, currycomb, rack, manger, and everything about the horse must be thoroughly purified with a solution of chloride of lime.

SICK TURKEYS.

In addition to my inquiry of August 26th, regarding sick turkeys, I would like to ask if the disease I refer to is not what is recorded in the hen books as "Shooting Red," or the time when the turkeys head turns to a red color, and the turkey begins to come to maturity. The hen books give very little information on this disease and the remedy. Can you or some of your subscribers give me more light on this subject? G. E. H.

Shrewsbury, Mass., Sept., 1867.

REMARKS.—In a long experience in raising turkies, we never met with a case of the *shooting red*, and must, therefore, call upon some of our better informed correspondents to come to the assistance of "G. E. H."

BEES AND PEACHES.

One of my neighbors has made complaint that *my bees* are destroying his peaches, and that I keep so many bees that they cannot get enough at home and have to go abroad to get their living! The peaches alluded to, wither and rot and fall to the ground. There are plenty of bees owned in the neighborhood, and I consider the *accusation absurd*, that *my bees* are the *sole perpetrators* of the deed, providing that bees *are injurious to peaches!* for I think that they are as likely to go quite a distance from the hive to gather sweets for their sustenance as to remain near at home.

Will you please to inform me through the FARMER whether bees are or are not injurious to peaches? J. A. R.

Brookfield, Mass., 1867.

REMARKS.—We have watched the action of bees, wasps, hornets and other insects upon fruit for many years, but have never known them to injure it while in a perfectly sound state. If the skin of the peach is broken by a blow, or by cracking, and the juice flows out, the bees soon know it and will help themselves to a meal; so will wasps, hornets, flies, and probably other insects. We do not know that bees have the power of perforating the skin, if they would.

THE SEASON, CROPS AND INSECTS, IN WORCESTER COUNTY, MASS.

The first crop of hay was a maximum yield, and notwithstanding the rainy season, was secured in fair order. The second crop, or rowen, is abundant, beyond all precedent within the memory of an old man. Oats, above medium. Barley good. Early sowed spring wheat, first rate, as usual; late sowed, worthless, as usual. Corn, below medium, and has been considered rather late, but with the fine weather, it is now rapidly passing the boundary of danger from frost. Potatoes are believed to be a complete failure on all wet land, and they do not promise more than half a crop on such lots as have not yet been visited by the rot. It is the general opinion of farmers that the rot of the tuber will yet be as universal as is the blight of the tops, from which no potato field escapes.

Small fruits have been most abundant. Peaches few; pears are plenty, but crack badly, and lack their usual flavor. The crop of apples is, perhaps, a one hundred per cent. improvement on last year, but is still one of the smallest.

Canker worms have been about us for a few years past, but this year they were in *diminuendo*. The tents of caterpillars were few and far between. The Turkish curculio, in spite of all our jarring and other warfare, offensive and defensive, was present in sufficient numbers to destroy, as usual, nearly all the plums, and to disfigure what few apples we have. The white grubs, or larva of the Dor beetle, have seriously injured many corn fields, while a certain odious and odorous little animal is now doing good service in removing the grubs from the corn hills. I. B. HARTWELL.

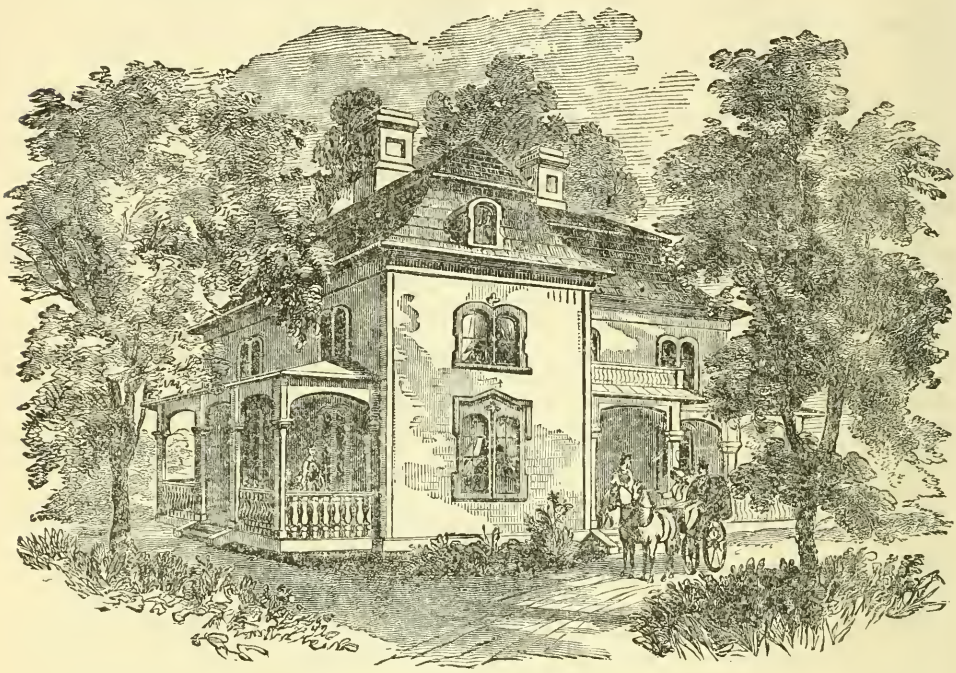
Wilkinsonville, Mass., Sept. 13, 1867.

GRAFTING THE GRAPE.

Your Campello correspondent wishing to know how and when to graft his grape vines, I will give him my method, as follows:—Cut the scions late in the fall, and keep them in damp sand in the cellar through the winter; in the spring, after the vines have commenced growing, and the buds have burst open, remove the earth from around the stock, and cut it off about one inch below the surface and split it as in cleft grafting; take scions with two buds, and sharpen them in the form of a wedge, in such a manner as to bring the lower bud one inch above the stock when it is inserted, then insert, and as they will not need any binding, replace the earth so as to leave the lower bud *just below* the surface; keep it moist by mulching or frequent watering. If suckers come up from the root, pinch them back as often as they appear.

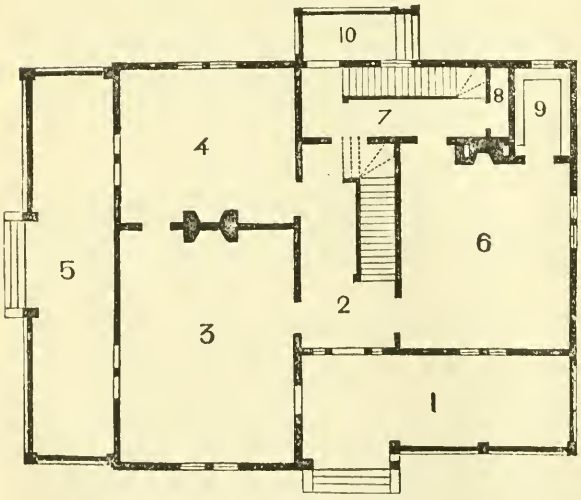
B. L. STETSON.

South Hanover, Mass., Aug. 26, 1867.



A SUBURBAN OR VILLAGE RESIDENCE.

The accompanying design is an example of a class of houses suitable for small lots in the immediate neighborhood of cities or villages, drawn for the FARMER by George E. Harney, Esq. Its form and the arrangement of rooms, &c., may afford hints to those who do not wish to copy all its features. The following description is furnished by the artist, who estimates the cost of its construction, built of wood, at about $4000, with prices of labor and material at current rates before the war.



Plan of Principal Floor.

No. 1 is the front entrance portico, opening into the hall, No. 2, 8 feet wide, and containing front stairs to chambers. The first door on the left opens into the parlor, No. 3, 15 feet by 20, lighted by two mullioned windows, one of which reaches to the floor and opens upon the veranda, No. 5. The library, No. 4, is 13 feet by 15, and opens upon the veranda in the same manner as the parlor. No. 6, the dining hall, measures 15 feet by 17½, and contains a large closet, No. 9, fitted up with a dumb waiter rising from the kitchen below. No. 7, the back entry, measures 6 feet by 16,

contains stairs to chambers and basement floors, and opens upon a gallery, No. 10, leading to the yard; under the gallery is the yard entrance to the basement.

The second floor contains four good sized chambers with bathing-rooms, dressing-rooms and closets. In the attic, which should be finished throughout, will be three large bed-rooms, besides a storage for trunks, &c. The first story is 11 feet high in clear, and the second 9½ feet.

AGRICULTURAL ITEMS.

—Sheep will not bark trees that are whitewashed with a little sheep manure in the wash.

—The maple sugar manufactured in Vermont is nearly equal in value to its products of wool.

—A coating of three parts lard and one part rosin, applied to farm tools of iron or steel, will effectually prevent rust.

—The remarkable fertility of the waters of the river Nile, in Egypt, was ascribed by Baron Humboldt to a slime, the product of fish.

—A proposition to sell all fruits by weight instead of by the box, basket or other measure was received with great favor, and passed unanimously, by the American Pomological Convention.

—The Walter Wood Reaper Factory, at Hoosick Falls, N. Y., employs about 400 men, and is capable of turning out 50 machines per day. Sales last year amounted to about a million of dollars.

—A correspondent of the Iowa *Homestead* says he presumes that in Van Buren county alone $15,000 would not replace the trees that were destroyed by rabbits in that county last winter.

—J. F. Simmons, of Iowa, writes to the New York Farmers' Club, that his experience in ploughing in buckwheat as a fertilizer, had convinced him that it was not only an exhausting crop, but that it poisoned the soil.

—Prof. Swallow says of the white oak and post oak lands of Missouri, that "the subsoil is usually richer than the surface, and deep plowing makes a vast difference in their productive powers. These lands are very superior for fruit culture.

—The Cotswold ram, and other sheep, which we mentioned a week or two since, as having been purchased in England by Mr. Loomis, of Windsor Locks, Conn., have arrived at his farm. Mr. Loomis remains abroad until November.

—An Iowa correspondent of the *Rural American*, lays down land to grass by sowing the seed immediately after harvesting his oats, trusting to the cattle, which are turned in to pasture off the stubble, to tramp in the seed.

—A correspondent of the *Rural World* uses a medicine for the cure of slobbers in horses, that though infallible, is not popular because it is so simple, handy and cheap. A dose or two of from one to two gallons of dry wheat bran has never failed with him.

—In reply to an inquiry addressed to the New York Farmers' Club, as to the advantages of the interior of Long Island, for market gardening, it was stated that the Long Island railroad will not take manure as freight, and that the general impression is, that the soil is too poor.

—A Wisconsin wine maker was overtaken last fall by cold weather, and some 5000 lbs. of his grapes were frozen up in boxes. Wine made from these grapes in April was "one hundred per cent. better than that made from the same quality of grapes in the fall."

—Dr. J. A. Warder, alluding to grape soils, states that it is the very common opinion, after many years, experience, of those who have been eminently successful in the culture of the vine, that the clay cannot be too hard and compact for the roots of the grape to penetrate.

—A mixture of gelatine and glycerine, is liquid while hot, but on cooling it becomes solid, retaining considerable elasticity and toughness. The neck of a bottle dipped into this melted compound is covered with an air-tight cap, which can be made as thick as desired by repeating the operation.

—The subject of destroying wire-worms was discussed by the Herkimer County, N. Y., Farmer' Club, and Judge Owen said he had tried many things to kill them off ineffectually. Finally he let a field go fallow one year, plowing it three or four times. The worms got starved and left the premises and have not returned yet.

—T. Jones, South Hadley, Mass., complains in a letter to the New York Farmers' Club of fraud in new strawberry plants. He has now half an acre of fancy, high-priced kinds, and the cost of plants and of cultivation has been $500, while he has received hardly as many cents. Of twenty kinds only two are valuable.

—The Paris *Kentuckian* says "Mr. S. W. Tevebaugh, of this county, has shown us some singular grains of corn, in which the grains are doubled, each grain having a separate heart. He accidentally noticed a few grains as he was shelling his seed corn last year, which he planted, and they produced ears of corn with all the grains doubled, and two stalks to the grain."

—The influence of food on the quantity of milk is very striking. A half starved cow not only yields but little milk, but what it yields is miserably poor. On the other hand, the liberal supply of food rich in nitrogenous and phosphatic elements of nutrition tell directly on the milk. Nothing, therefore, can be more injudicious than to stint dairy cows in food.

—The chicken cholera that has proved so fatal in many places at the West, is ascribed by R. H. Murray, of Calumet, Ill., to a species of putrefac-

ture caused by a too exclusive barn-yard diet in hot weather. He has been successful in its cure by a mixture of a small teaspoonful of cayenne pepper and a tablespoonful of charcoal with a quart of corn meal dough fed to the chickens.

—Brother Boylston, of the Amherst, N. H., *Farmers' Cabinet*, is merry over his election to the Bench of the "Bread, Butter and Honey" Circuit of the State Agricultural Fair of New Hampshire. He is determined to do his whole duty, and hopes that his "Opinions" will be such as to honor the State. We have no doubt that his most sanguine anticipations will be more than realized.

—B. McClure states in the *Practical Farmer* that feeding rusty straw to cattle and horses has a very injurious effect upon their health and efficiency. The class of diseases induced by this aliment are marasmus, glanders. farcy, shin diseases, catarrhal affections and watery swellings of the body and legs. He adds that during the last eight months, out of 700 horses fed upon such straw, from 45 to 50 were on the sick list.

—Having been cured of rheumatism by the following prescription, Mr. William Bassett of Birmingham, Michigan, communicates it to the New York Farmers' Club. Sarsaparilla root, sassafras chips, and gentian root, of each one ounce; gum guaeum, half ounce; iodide of potassium, one-fourth ounce. Simmer the first four articles in a gallon of water to half a gallon; when nearly cold add the potassium; stir together, strain, bottle. Dose, wine-glass full twice a day.

—L. E. Petron, Highgate, Vt., thinks it unwise to abandon the cultivation of corn and depend on the West. He says, in a letter to the New York Farmer's Club, that transportation costs so much that we never get it retailed there short of $1 in silver, while on good corn land it can be raised for from 50 to 75 cents, beside fitting the land for a good crop of wheat, to be followed by grass. On light, warm soils I spread the manure, and plow or drag in. On heavier and colder soils put some in the hills, to give an early start in the spring.

—Mr. B. F. Cutter, of Pelham, N. H., tells a story in the *Mirror and Farmer* of a hog, which, though well fed and apparently healthy, "did not grow one atom." Soon after feeding him one day, the owner happened to look into his pen, and found the trough completely filled with rats, which at once accounted for the lean condition of his starving hog. The moral of the story is put in the interrogative form,—Is it more profitable to raise weeds in the corn and potato field, or in the garden, than to fatten rats in the pig's trough?

—Amos Steller, Cary, Ohio, advises the New York Farmers' Club not to allow their sweet apple pomace to go to waste after the sweet cider is expressed, but put them in some water-tight box; let them remain until they are well heated; then return them to the press, and add, say, to the production of thirty bushels of apples, six or eight gallons of water, and you can press from one and a half to two barrels of vinegar from the same, and a good article at that. Vinegar made in this way will sour much sooner than otherwise.

—Agricultural writers occasionally recommend the cultivation of sun-flowers for seed. It is said to yield a gallon of oil to a bushel. A Mr. Spear recently remarked at a discussion of the subject by the New York Farmers' Club, that "When I was farming in the West we all had the sun-flower fever, and huge quantities were raised; but there were two difficulties, one was to get the seeds from the hulls, and the other to find any market for the seed after we got it out. We fed it to our poultry, and in this way found it very useful, for they decidedly preferred it to corn."

—Industry is commendable, but there is danger, especially on the farm, of working too hard. The case of an Iowa farmer was mentioned at a late meeting of the New York Farmers' Club, who toiled and grubbed and broke down his constitution, and made himself decrepit, to secure a farm for each of his boys, adjacent to his own, hoping they would be all about him in his old age—children and grand-children—to cheer and comfort him. He succeeded in securing the farms. But what then? Why the boys live 2000 miles away, and the bent up old man has strangers for neighbors.

—At a late meeting of the New York Farmers' Club, Mr. Quinn gave the following directions for managing currant cuttings. Currant wood can be turned into a plant the year it is grown by setting any time from August to November. I would make a square, clean cut, have the ground mellow that the young rootlets may meet with no obstructions, and then push the dirt closely around the bottom of the cutting. The fall is decidedly the best time to commence operations, because in so doing one gets a two years' growth in one. If it is very dry some mulching will be required, but generally, at this season, the ground is warmer than the atmosphere, and 98 per cent. should live.

—A correspondent of the *Country Gentleman* at Rock Island County, Ill., who has taken pains to look about the harvest fields of that section, and to inquire carefully of others, says that eight, ten, and all along to eighteen bushels per acre, is the yield there. Two fields, of 160 acres each, yield less than ten bushels per acre. He puts the average at about twelve bushels. Where the 200,000,000 bushels of wheat for this year's crop, that all the papers tell of, are to come from, he don't see. But he does complain that, before harvest, editorial correspondents and travellers, who perhaps didn't know in passing a field of grain whether it was oats, wheat, rye or barley, reported that *such big crops never grew before.* With much joy, we were about to return to seventy-five cent wheat, fifteen cent corn, and two cent beef and pork. The

consumers were to live cheaply, and get fat off the farmer. These big statements were all read from the daily papers by the sturdy and quiet farmer, while we looked on in vain to *see it*.

Mr. Samuel B. Hamblin, of Acushnet, Mass., raised this season, from one acre and ninety-four rods, fifty *bushels* of as handsome wheat as can be shown in the State.

—A late number of the Stockton, Cal., *Independent*. illustrates the extent of the grain trade at Stockton, by saying that two firms alone paid out last Saturday, eleven thousand dollars for wheat. And as evidence of the agricultural prosperity of the San Joaquin valley, the same paper adds that the greater number of mortgages resting on farms in 1866. have been cancelled.

—M. Geyelin, manager of the French "National Poultry Company," says that turkey cocks are employed largely to hatch and rear chickens, as they can incubate a much larger number of eggs than hens. The way in which they are induced to take to the hen's eggs is as follows: "A glass or two of strong wine is poured down a turkey's throat, and whilst in a state of inebriation the feathers are plucked off his breast, and he is placed on a large sitting of eggs. On coming to his senses next morning, he feels that a sudden change has come over him, and as the denuded and irritated part of his body is kept warm and soothed by crouching down on the smooth eggs, he wisely accepts his new position, and discharges the duties of a mother to the family thus foisted upon him with tenderness and vigilance."

STRAW AND ROOT CUTTERS.

Reader, have you supplied yourself with one of these implements? If not, do so without delay. There is annually much refuse matter accumulated about the barns and stables which a good straw cutter will enable you to work up to advantage, and with the assistance of a root cutter—provided you have a supply of roots of any kind—to convert much fodder of an indifferent quality into a means of sustenance for your stock. We think it would be economy to *borrow* the money to purchase one, rather than be without it, though we trust that would not be necessary with our readers.

If you once make careful trial of cutting the fodder for a stock of cattle, horses included, you will realize how much corn fodder, straw and hay of an indifferent quality you will be able to work up, and at the same time become convinced that your stock has grown faster, or made more fat and flesh, than under the old practice of feeding out entirely long hay.

If no grain, whatever, is fed to cattle, the cutting may not be so important; we do not know, never having tried it. Where a portion of the feed is grain—which is commonly the case in all places where hay finds a ready market—cutting the hay will prove of essential advantage.

We fed six or seven cows and five horses last winter on corn fodder, English hay, meadow hay and barley straw. It was all cut and thoroughly mixed, and sprinkled with cold water and a little salt as the mixing proceeded, then thrown into a heap. At the end of two days, one end of the heap was broken down and meal mixed with it. That for the horses being equal to about three quarts of corn meal per day; and that for the cows, equal to one quart of corn meal per day. All the stock did well, and it seemed to us at a considerable less cost than in the old way of feeding. The experiment was not an exact one, but confirmed several others of a similar nature, made some years before.

The season for feeding stock in the barn is at hand, and we know of no one item of economy with the farmer more important than the use of the hay cutter.

If roots are used instead of grain, they flavor the mass of dry fodder, so that cattle eat the whole eagerly. We knew one farmer to feed 30 or 40 cows through an entire winter on *wheat* straw, cut, and flat turnips, also cut. The cows were in sufficient flesh, and were producing a fair average of milk.

Improvement of Horses.—At the late fair of the Vermont State Agricultural Society, an association was formed for the improvement of horses, which, though independent in its organization, is to act as auxilary to the State Society. Officers were elected as follows:—

President.—Hon. T. W. Park of Bennington.
Vice Presidents.—Frederick Billings of Woodstock; Richard Bradley of Brattleboro'; A. W. Griswold of Morrisville; H. G. Root of Bennington.
Secretary.—Geo. A. Merrill of Rutland.
Treasurer.—Henry C. Horton of Vergennes.
Directors.—L. S. Drew of Burlington; E. S. Stowell of Cornwall; Geo. W. Hendee of Morrisville; Frank Goodhue of Brattleboro; N. T. Sheafe of Derby Line; Thomas Sanders of Brookfield; George C. Hall of Brattleboro'; L. T. Tucker of Royalton; Charles Clarke of Rutland; H. B. Kent of Dorset; Frederick E. Smith of Montpelier; C. Brainard, Jr., of St. Albans; E. A. Park of St. Johnsbury.

LIME, AND THE SOIL THAT NEEDS IT.

Doctor Jackson, in his Geological Report of Rhode Island, recommends the use of lime in combination with vegetable and animal organisms, in the compost heap. He places full reliance, it seems, upon its power to neutralize the noxious acids, which are more or less abundant in the humus of soils, after the compost has been incorporated with the earth. Ruffin, in his able essay on calcareous manures, recommends the use of lime on all soils not naturally calcareous.

Lime is one of the most common substances with which we meet in the crust of the earth, frequently constituting whole mountain chains, and in combination or mechanical association with other earths and metallic oxides, constituting a number of valuable minerals. In the bodies of animals it is detected as an important ingredient, particularly of bones and shells. It also enters as an indispensable constituent into vegetables, and is found in variable quantities in the ash, or residuum, which they leave upon burning, as well as in solution in almost all natural waters.

Formerly, lime was regarded as an elementary substance; but the results of modern experiments have demonstrated it to be a compound body, its principal ingredients being a metal, by chemists called "calcium," and oxygen, or vital air.

Phosphorus—a very important principle in vegetable nutrition, may be made to combine with lime by fusing the two together. The substance resulting from this amalgamation, is of a brownish color, called in chemical technology phosphate of calcium, and which is found to possess, in a remarkable degree, the power of decomposing water. "The phosphate of calcium," says an excellent writer on agricultural matters, "decomposes the water, the hydrogen of which combines with the phosphorus, forming phosphuretted hydrogen; while its oxygen combines partly with the calcium, forming lime, and partly with the phosphorus, forming phosphoric, and hypo-phosphoric acids. These acids unite with the lime, and form phosphate and hypo-phosphate of lime."

In most light soils of a sandy texture, there is generally found but little *humus;* the vegetable power is merely nominal in a natural and unfertilized condition, and the necessity of manuring them imperative, in order to secure even an ordinary crop. By turning in green crops, such as peas, clover and buckwheat, and applying lime in liberal quantities, we shall speedily reclaim and render them productive.

On poor low lands, of a clayey nature, lime is also found to exert a beneficial action. Such soils are not unfrequently possessed of clay, iron ore, or marshy ferruginous earth, which is composed, in a great measure, of clay and a liberal proportion of carbonate and phosphate of iron. These ingredients constitute a hard and compact body, the nature of which, and more especially the phosphate of iron, renders it extremely prejudicial to vegetation, whether reposing in subterranean, elongated strata, or in a state of solution, and occupying a position so superficial as to place it within range of the roots of plants.

Foul lime is also a valuable article for ameliorating soils and stimulating crops. It is made by the gas makers, and is the lime used for purifying the product of gas works. In this process the gas is made to pass through it —none but the best quality of lime being available for this purpose—and imparts to it ammonia, carbonic acid, and carburetted hydrogen, all of which principles are of service in promoting the development of vegetation in every stage of its existence.

Limestone often contains oxide of iron, silica and alumina. In one specimen of limestone which was subjected to analysis, there were found, in 100 parts:—

Chalk	53.00	parts.
Carbonic Acid	42.50	"
Silica	1.12	"
Alumina	1.00	"
Iron	0.75	"
Water	1.63	"
Total	100.00	

In some limestone, the relative proportions of the three ingredients—silica, alumina and oxide of iron—are greater than they were ascertained to be in the specimen the analysis of which is here presented. Chalk is a concrete of lime. It is common in England, Denmark and France, as well as in other countries; but the Spanish chalk is not identical with this substance, being a sort of steatite, and is classed as a distinct substance. There is, also, a black chalk.

The lime most used by the English agriculturists in their farming operations, is procured

by "burning" the common chalk or lime stone. It is rarely chemically pure, containing, almost invariably, a quantity of sand or clay, or both, with the red oxide of iron. These, however, exist in too limited quantities materially to influence its fertilizing powers, as may be seen by the following analysis:—

Carbonate of lime	95.05 parts.
Water	1.65 "
Silica	1.12 "
Alumina	1.00 "
Oxide of iron	0.75 "

One hundred parts of common chalk contain:—

Lime	56.5 parts.
Carbonic acid	43.0 "
Water	0.5 "

Some clay loams, that have been highly manured and cultivated for several years, become inert, like an overfed man or animal, and refuse to yield fair crops. A heavy dressing of lime, or sometimes *sand*, will stimulate them into a remarkable activity, which will continue two or three years without the application of much manure.

QUAILS AND GROUSE.

In dressing some *Quails* and *Prairie Chickens* once, which were sent us by a friend from the prairies of Illinois, we had the curiosity to open the crops of some of them to see what was there. In the crops of the *grouse* we found plenty of evidence that they had visited the corn-fields of the farmers, as they were partially filled with the yellow flat corn which is so extensively cultivated in that State.

In the crop of the quails we found a variety of food, and among it *acorns*. Some of them were *perfect* and of a size altogether inconvenient to be swallowed whole, by such a bird, we should think, and others in various stages of the digestive process.

The husk or outside of a thoroughly-ripened acorn seems like sand, and may be composed much like the surface of a straw of the wheat plant. It is hard enough to destroy the fine edge of a knife upon cutting it, and yet, the entire surface of some of the acorns as large as the end of one's little finger, was eaten away, as though it had been triturated in some vessel with gravel stones. In others, the shell was entirely gone, while others were reduced in various degrees.

What a finely-adjusted and powerful *mill* it must be to convert such flint-like substances into a soft and slippery pulp.

While looking at a large Ostrich in a menagerie, once, a small boy stood by with a pair of woolen mittens in his hand. The African eyed them curiously for a moment, made a thrust, and the boy was minus one mitten! We could see it going the circuit down his long neck to the crop!

But of all the gormandizing that we ever knew or heard of, was that of a sea gull, which we took from Cape Ann and sent into the country. Half a mile from the house where he was kept, there was a large pond, and once each day he would take wings, go there and make the water fly at a great rate. After having got through with his ablutions he would return at once to the house. His appetite was enormous. After having eaten four or five good sized perch one day, and a large piece of soap which the men had just been using before going to dinner, one of the boys who stood by, said, "darn him, I believe he would swallow my jack-knife." "Throw it to him," said another. So the knife was thrown, and caught by the gull before it touched the ground, and went down into the abyss with the perch and the soap! But the boy had lost his knife, and was in trouble, so one of the men caught up the gull, and gently manipulating the crop and throat, soon brought out the jack-knife as good as ever.

The reader is referred to an interesting article on another page, on *How Fowls Grind their Food.*

For the New England Farmer.

CHEMICAL TERMS---No. IV.

Ammonia, is a transparent, colorless gas, possessing an acrid taste and an exceedingly pungent smell. It is composed of one volume of nitrogen and three volumes of hydrogen, chemically combined. From these three volumes of hydrogen and one of nitrogen, not four volumes of ammoniacal gas are formed, but only two; that is, the ammonia occupies but half the space of the gases from which it is formed. It is easily obtained by the action of lime on muriate of ammonia, or sal ammoniac. It is produced when animal substances are heated with exclusion of air. These substances always contain nitrogen and hydrogen, which at the moment of being set free by heat, combine with each other, forming ammonia. It is also evolved in the form of carbonate of ammonia from all vegetable and animal substances containing nitrogen, during the pro-

cess of putrefaction,—hence its presence in decomposing manures. As it is highly volatile and tends to fly off as it is formed, some substance should be frequently added for which it has an affinity, as sulphuric acid diluted with water, sulphate of lime, peat, muck or loam, with which it will combine, and be retained in the decaying mass.

Carbon.—This abounds in the animal, vegetable and mineral kingdoms. It enters into the composition of the bones and soft tissues of animals. It constitutes the largest part of the bulk of vegetables. If these are burned with the partial exclusion of air, so that there shall not be oxygen enough present to enable them to burn rapidly, the volatile portions will be driven off by the heat, and the charcoal or carbon will remain.

Charcoal when freed from earthy matter is nearly pure carbon. Mineral coal is composed largely of carbon—the remains of former vegetation. The diamond is pure carbon, and may be burned without leaving any ash behind. Carbon is found in the form of carbonic acid, combined with lime, in marble, coral, shells, &c., and abundantly in nature. Plumbago, or as it is called, black lead, is crystalized black carbon. Carbon shows clearly how one and the same body may have different forms and different properties. In charcoal soot, coke and animal charcoal, it is black, and very combustible. In plumbago it is black, with a crystalized structure, and nearly incombustible, so that crucibles are made of it, which bear the strongest fire without burning. In the diamond it is colorless, and crystalized in the form of a double pryamid, and is almost incombustible.

Coal is not decomposed at common temperatures, that is, it does not enter into chemical union with the oxygen of the air and water. But when it is heated to redness this readily takes place. It then burns and disappears, with the exception of a small quantity of ashes. The heat developed by the burning is the result of the chemical union of the carbon with the oxygen of the air. The gas generated is called carbonic acid, and consists of one part or atom of carbon and two atoms of oxygen. Carbonic acid is always formed when burning charcoal has a sufficient supply of air; but when there is a deficiency of air, carbonic oxide gas is formed, which consists of one atom of carbon, and one of oxygen. This gas is what miners call coal gas, or choke-damp. This is very destructive to life when inhaled. What is called the fume of charcoal, is the result of the slow combustion of charcoal, as when it is smothered with ashes which obstruct the access of air, or when the damper of a stove is closed before the coal is burned out, which prevents the draught of air and consequent supply of oxygen.

Carbonic acid is formed wherever substances are burning, with free access of air; wherever men and animals are breathing; and wherever decay and putrefaction are going on; and thrown into the atmospheric ocean by which the earth and all its products are constantly bathed. From the atmosphere it is absorbed by all growing vegetables, and thus its injurious accumulation is prevented, which occurs only in exceptional instances, and a due equilibrium is preserved. From its existing largely in nature in carbonate of lime and other alkalies, it was called by Dr. Black, fixed air. Many springs are impregnated with this gas, which gives their waters a sparkling appearance and a fresh and pleasant taste. Immense quantities of water are artificially prepared under the name of soda wa er by impregnating them with carbonic acid gas. It is about one-third heavier than atmospheric air, and may be poured from one vessel to another like water. If air contains more than fifteen per cent. in bulk of this gas, it will not support animal life or combustion. Lighted candles will be extinguished in it. R.

Concord, Mass., Sept. 28, 1867.

For the New England Farmer.

CHEMISTRY.

If I rightly remember, common salt was formerly called by chemists, *muriate of soda;* and was believed to be such a chemical combination as the name indicated. Subsequent experiments, such as the combustion of the metal sodium in chlorine gas, seemed to prove that it had been wrongly named, and thenceforth it was called, technically, *chloride of sodium*, a name clearly indicating its true combination. Not being well versed in recent chemistry, I was not aware that the name had been again changed, until I saw "Chemical Terms," No. 2, in the FARMER of 21st of Sept. inst.; where it is called, "chloride of *soda;*"—thus making it a hitherto unknown and anomalous combination of chlorine and the protoxide of sodium; —or else the writer or printer has so confounded "chemical terms," as to put *soda*, the protoxide of a metal for *sodium*, the metal pure and simple. In either case it (common salt) is not well chosen as an example of the combination of an acid with a base; for if we may rely on modern chemistry, only three years old, common salt,—unlike sulphate of soda, Glauber's salts,—is a *haloid* or binary salt, and a chemical combination of the elementary gas, chlorine, and the metal sodium, and is therefore called, technically, chloride of sodium. In the common language of chemistry, chlorine is not an acid, neither is sodium such a base as comes under the definition, "an alkali or oxide of a metal." But a *base*, as a general chemical term is, "the principal element of a compound, usually electro-positive in quality." *Webster.*

Filtration.—[The straining of a liquid through unsized paper, felt, fulled cloth, or other permeable substance, so as to separate therefrom precipitates and other impurities, is called a filtration; therefore, filtration is the

straining of a liquid through unsized paper,] This would be called by logicians an unwarranted *conversion of a proposition;* and when applied to another subject, would be about as follows:—[The term *goose*, and the names of animals in general, are, in grammar, common nouns; therefore, a common noun is a goose.]

We do not find that the term, *filter*, has any exclusive chemical signification; but if it is entitled to any special definition, it should be that of "a piece of felt or fulled woolen cloth," as its etymology implies.

It is quite proper to inform ignorant farmers that chemists think that unsized paper makes a superior filter, and that they generally use such an article for filtration; but the fact should not be concealed from such of our brother farmers as may not have a chemical text-book, or even a common dictionary at hand, that *filtration*, as a chemical term, is, by an eminent chemist and author defined as—"The process of separating precipitates, by straining, or passing the fluid through *any* porous substance." I. B. Hartwell.

Wilkinsonville, Mass., Sept. 23, 1867.

HOW FOWLS AND BIRDS GRIND THEIR FOOD.

Fowls have no teeth to grind or masticate their food with, and the best they are able to do with it at first, is to pick it to pieces and swallow it whole. Kernels of grain are swallowed *whole* by them, and as they are surrounded with a tough pellicle or skin, which the juices of the stomachs of animals will not readily dissolve or digest, they could obtain no nourishment at all from grain, if this tough pellicle were not broken.

Let horses, cattle or people swallow kernels of grain, or ripe seeds of fruit, *whole*, and they will pass off in the ordure unbroken, and most of them will not lose their vitality, in consequence of such a process, and such grain would afford no more *nourishment* than so many smooth gravel stones.

Now, if we dissect the gizzard of a fowl of any kind, we find a lot of small gravel stones, which are usually the hardest kind of flint, granite or sand stone. Surely here is a pocket edition of Farm Grist Mills. The *mystery* is, where do fowls find such little flint-like stones, when their abode is on farms, the soil of which is a complete mold or muck, destitute of gravel, or when they are confined in close quarters for month after month, during winter, for example, or in a grass yard in warm weather, these little gravel stones are *very important articles* with fowls—quite as important as the teeth of ruminating animals.

Fowls swallow their food, broken or not, and it enters the crop or first stomach, and remains in it until it has become softened, more or less, when a small quantity at a time, just as grain runs into a grist mill, is forced into the gizzard, among the gravel stones. This gizzard is a strong, muscular stomach, and plays night and day, when there is a grist to grind, similar to a bellows, contracting and expanding, thus forcing the gravel stones into the grain, and breaking it to fragments, and triturating the whole mass; after which it is in a suitable condition to be quickly digested. Of course, these little stones will become *very dull*, after having been in operation for a month or two, and the gizzard, like an economical miller, throws them out of doors, and demands a better set; and if they are not furnished of course the grist is not half ground, and of course more than twice as much food is necessary to sustain life, and form eggs, as would be required were it well ground; and of course the eggs of fowls would cost double in this case that they would in another with the same food. This suggests the importance of supplying fowls and birds in cages with plenty of sharp gravel stones, and of having their food bruised or ground fine before they eat it; and it suggests

The Importance of allowing Fowls to Feed Themselves.

When fowls have access to grain all the time, we see them eat in the morning only a few kernels at a time, and after an hour or so, they will take a few kernels more, and thus they pass the entire day by eating a little at a time, and very often.

The philosophy of their eating so frequently and but a little at a time, is, the food has a sufficient time to become softened in the crop before it passes into the gizzard, and it has sufficient time to be thoroughly ground and digested; whereas, when fowls are not allowed to have access to their food, but are fed once or twice a day, they become very hungry, and swallow as much as their crops will hold at one feeding. Now for several hours, no food will be softened sufficiently to pass into the gizzard, consequently their grist mill must stand idle. Now the moistened grain swells and distends the crop of the fowl, and it feels by no means comfortable. Shortly all the food in the crop is in the proper condition to be ground, and the result is, that it is forced through the gizzard with so much rapidity that it is not half ground, and, therefore, cannot be half digested; and if it is not half digested, of course not half the nutriment, or egg-producing material, can be extracted from it. Nor is this the greatest drawback attending feeding fowls only once or twice a day. When a fowl fills its crop at one feeding, before the food can possibly get out of it, it begins to heat up, and derangement and ill-digestion follow, very much as is the case when we fill our stomachs as full as they can be crammed.

The way to feed fowls, and particularly those that are laying, or being fattened, is to allow them to have free access to food at all times. In this way they can always supply the demands of their stomachs and grinding

apparatus, exactly as food is needed; and they will fatten more rapidly, or lay more eggs, and consume much less food than they will if they are fed as much as they will eat twice a day.

My practice now is, and always has been, to allow my fowls to have free access to corn in the ear all the time, both summer and winter. Of course they are obliged to shell it for themselves. Occasionally we feed them screenings, and when we have no screenings we take a peck or so of wheat, and as much buckwheat, oats, barley or rye, and mingle them all together, and mix the grain with some chaff, so that they will not be as liable to consume as much of it at once as if it were clear grain. When we have an abundance of milk, we place a vessel containing it where they can find it at any time. In warm weather, after it has become loppered, they will consume, during the day, much more of it than one would suppose; and milk is as good to fatten poultry and make chickens grow, as it is for pigs; and it is one of the very best kinds of food for any kind of poultry, when they are laying.—*S. Edwards Todd, in Country Gentleman.*

WORKING OXEN BY THE HEAD.

Some time since we published a statement of a teamster who said that oxen yoked by the head would do more work and do it easier than those yoked in our ordinary way. We find a very different opinion expressed in a communication to the *Western Ruralist.* The writer says:—

I have had a good deal of practice in working oxen. In 1853 I was lumbering on the Pacific coast, 150 miles from the entrance to the harbor of San Francisco. We had eighty yoke of Spanish and American cattle, drawing logs to the mill and lumber to the landing. We had several men who claimed that the Spanish way of yoking was the best. To test the matter, I had a yoke, Spanish fashion, hitched to a log, which, after repeated trials, they could not draw. I then had them unyoked and yoked Yankee fashion. At the first pull the chain gave way, but at the second trial they drew the log several rods. I put them on the road, where the fact was demonstrated that one pair, with the yoke and bows, was equal to two yoke with the timber strapped to their heads.

In no case would the people use the stick, after we had broken their cattle to our yoke. Ask one of them the reason, and the reply would be that the stick was no good. I broke sixteen yoke in the winter of 1853, and could have had thrice as many, if I could have attended to them.

This plan of working cattle with the stick fastened to the head is a cruel way. They cannot take advantage of a heavy load; they cannot turn their heads in either way; they cannot fight their cruel tormentors, the flies, and there are many other disadvantages. I am satisfied the yoke and bows are far superior to the Spanish way, and how any sane man can recommend such an outlandish mode of working oxen is more than I can comprehend. E. R. M.

PHILOSOPHY OF HAY-MAKING.—The following inquiries and suggestions by the agricultural editor of the New York *Tribune*, afford suitable topics for the discussion of farmers' clubs, and for the investigation of the chemists of our agricultural colleges:—

We want to know something of the changes produced in the nutritive properties of grass by the vicissitudes incident to hay-making. Grass partially dried and then moistened with dew, parts with its coloring matter—becomes bleached. Do any of the nutritive qualities also evaporate with the dew? If so, what changes have the gum, sugar, starch, &c., undergone, that make them more volatile than before the grass was dried? What change in the nutritive qualities of grass does heat produce that is generated in the mow or cock, by moisture? If, as in the case of the cock, a little heat is supposed to do no harm—why may not hay which in a stress of weather is put into the barn a little too damp, have the decomposition arrested by salt or lime, or the injurious gases absorbed by charcoal?

—At a convention held in Iowa City, Aug. 9th, the Concord grape was almost unanimously endorsed for general cultivation.

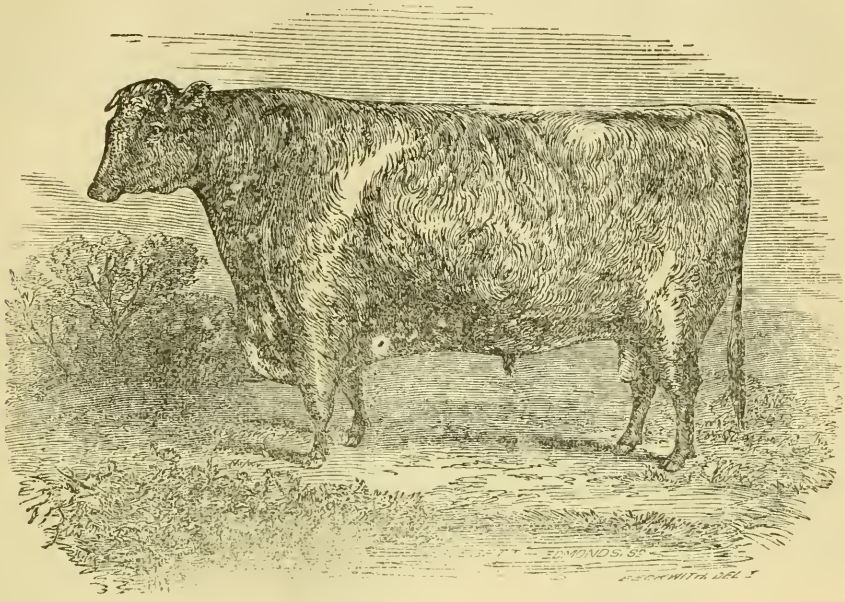
THE FARMER FEEDETH ALL.

BY CHARLES GODFREY LELAND.

My lord rides through his palace gate,
My lady sweeps along in state,
The sage thinks long on many a thing,
And the maiden muses on marrying;
The minstrel harpeth merrily,
The sailor plows the foaming sea,
The huntsman kills the good red deer;
And the soldier wars withouten fear,
But fall to each whate'er befall,
The farmer, he must feed them all.

Smith hammereth cherry red the sword,
Priest preacheth pure the Holy Word,
Dame Alice worketh broidery well,
Clerk Richard tales of love can tell,
The tap-wife sells her foaming beer,
Dan Fisher fisheth in the mere,
And courtiers rustle, strut and shine,
While pages bring the Gascon wine;
But fall to each whate'er befall,
The farmer, he must feed them all.

Man builds his castle fair and high,
Wherever river runneth by,
Great cities rise in every land,
Great churches show the builder's hand,
Great arches, monuments and towers,
Fair palaces and pleasing bowers;
Great work is done, be 't here or there,
And well man worketh everywhere;
But work or rest, whate'er befall,
The farmer, he must feed them all.



DURHAM OR SHORT HORNED BULL.

So far as the production of beef is concerned, there is no breed equal to the Durham. The large feeders in Kentucky, Illinois and other Western States are very partial to the pure and grade Shorthorns, and the best lots of Western steers at the Brighton market are strongly marked by the English *Teeswater*, as the breed was at first called. Some families of the Durhams are very good milkers, though at present, here in Massachusetts, the Jerseys seem to be enjoying a large share of the public favor, and occupying a good proportion of the exhibition pens of our fairs.

Our engraving represents a Short Horned bull "Earl Seaham" which received a prize a few years ago at the New York State Agricultural Fair, and is a well-proportioned, fine-looking animal.

THE STATE AG'L COLLEGE.

We are informed by a prominent citizen of Amherst, that the prospects of this new institution are very favorable. He expressed an opinion that it would, under the management of an energetic and able President, such as he considered its present head, prove a decided success. It opened for students on Tuesday, October 1, according to previous announcement. The first freshman class is composed as follows:—

M. F. Casey, Wm. Barrows, Jr., George G. Graves, A. Basset, F. A. Hall, G. H. Eastman, W. H. Carey, George H. Bell, Amherst; W. B. Greene, Homer L. Cowles, Hadley; J. F. Fisher, L. B. Caswell, Fitchburg; Wm. P. Birnie, Springfield; C. A. Ellsworth, Barre; C. E. Brown, Northampton; A. A. Rankin, Pelham; G. A. Allen, Marion; A. Southwick, Belchertown; F. L. Whitney, Boston; W. G. Pratt, North Bridgewater; G. C. Woolson, Hopkinton; Wm. Wheeler, Concord; L. A. Sparrow, Medway; George Leonard, New Bedford; W. H. Banks, Phillipston; S. A Nichols, Danvers; G. P. Strickland, Amesbury; J. H. Herrick, Lawrence; W. H. Russell, Sunderland.

We understand that Hon. M. P. Wilder, of Dorchester, and Dr. Nathan Durfee, of Fall River have made valuable donations to the botanical garden attached to the College.

We shall watch the progress of this experiment in education with great interest. We believe it may be made productive of great benefit to the State,—if not in the manner which its originators anticipated, then in some equally beneficial form. We have heard the suggestion—and were favorably impressed by it—that, at the least, the graduates would be fitted for and admirably adapted to the conducting of agricultural newspapers, having the requisite scientific knowledge to detect the fallacies of mere theoretical writers, and the

ability to clearly and forcibly demonstrate to the agricultural community wherein their practice fell short of securing the best results possible from the means at their command. *Practical* knowledge of farming is always infinitely better than *theoretical* management, —but it seems to us that the combination of sound theory with skilled practice is alone needed to make agriculture, in every sense of the word, one of the professions, or arts, if the term apply better. Such theory the College course is designed to supply, and such practice the students should make a part of their Collegiate course.

But we have our College in working order, the first class creditable for unmbers, and we hope enthusiastic in their studies,—and now, with the heartiest wishes for its success, we await the report which shall confirm the doubts of the skeptical, or justify the claims of the friends of the Massachusetts Agricultural College.

FENCES.

The materials and labor required to build and keep fences in repair are among the heavy items of farm expense. The cost of the land on which they stand is another item on which J. Harris of Rochester, discourses as follows in the *American Agriculturist* :—

How much land does an old-fashioned fence occupy? I have always thought it took up a good deal of land, but never had the curiosity to measure. But this summer we have been building a stone wall along the whole west side of the farm, and after it was completed, and the old fence removed, I was surprised at the quantity of land we had gained. The ground, of course, might have been ploughed closer to the fence, but taking the case as it actually was, the old rail fence, with stones, weeds, rubbish, &c., occupied a strip of land one rod wide. A field, 31 rods long and 31 rods wide, contains about six acres. If surrounded by such a fence, it would occupy a little over three quarters of an acre of land. A farm of 160 acres so fenced would have twenty acres of land taken up in this worse than useless manner. Not only is the use of the land lost, but it is, in the majority of cases, a nursery of weeds, and, in ploughing, much time is lost in turning, and the headlands and corners are seldom properly cultivated.

Liquid Manure.—The best liquid manure that we have tried for all plants in pots, is that formed by pouring thirty gallons of rain-water over one peck of sheep's dung fresh from the pens, and one peck of soot. Stir the whole well up twice a day for two or three days; allow the liquid to stand a day or two longer; then stir again, and use it for watering with once or twice a week. A pound of guano in twenty gallons of water, along with half a peck of soot, will form one of the best liquid manures known.—*American Jour. of Hort.*

EXTRACTS AND REPLIES.

WILTED CHERRY LEAVES.

It was stated in a late number of the Farmer that cattle were poisoned by eating wilted cherry leaves. In my opinion they were not poisoned, but choked. I saw two cows that had eaten cherry leaves. On opening one that died, a bunch of leaves was found stuck in her throat, so as to prevent her swallowing, and thus caused her death. The other was in great agony and would probably have died if she had not been relieved soon. This was done by forcing about half a pound of the soft end of a strip of salt pork down her throat till she swallowed, when down went the pork and the leaves too. Then she was ready to eat some more.

Braintree, Mass., Oct. 1, 1867. E. French.

Remarks.—In connection with the facts that we have seen stated in some of our exchanges, of horses being made sick by eating *wilted* grass, the foregoing statement of Mr. F. may be a valuable and suggestive contribution to the general fund of knowledge upon this subject. In the multitude of counsellors there is wisdom. But can all the symptoms exhibited by animals that have died, or by those that have been injuriously affected by eating cherry leaves, be accounted for on Mr. French's theory?

In the account of the sickness and death of the ox in Gilsum, N. H., published in the Farmer of September 7th, it was stated that the symptoms of illness were first noticed in his eyes, which discharged a watery substance, as they do when they have been hurt. The next day they turned a bluish white, and the ox was entirely blind, and appeared to be in great pain, and did not eat. His mouth began to swell and corrupt, with an offensive smell. He grew worse for seven days, and then died.

Of a calf that died in Bolton, Mass., from eating leaves that were broken from a cherry tree, under which he was tethered, it was stated in an account published in the Monthly Farmer for 1855, page 386, that the first symptoms were excessive costiveness; the animal straining and showing frequent uneasiness. It then gradually lost its appetite, and exhibited symptoms of blindness. Continuing to grow worse, the poor creature began to tremble violently, moving round and round as if tipsy and crazy, moaning piteously, knocking its head meanwhile against anything that come in its way, until it finally dropped down and expired.

In the case of some cows in Plymouth county, Mass., the symptoms of the disease were first manifested in the cream from their milk, which would not make butter as readily as usual. To

ascertain the cause, the cows were watched while in pasture and seen to reach over a wall and browse some cherry trees within their reach. After changing them to another pasture the milk resumed its its former healthy condition.

Would all these symptoms have been manifested from mere choking?

It is, we believe, no uncommon thing to find a portion of the contents of the stomach in the throat of slaughtered animals; being forced there, probably, by their death struggle. Might not such have been the case with the bunch of leaves that Mr. French found in the throat of the cow that he examined? As oil, grease and fat are antidotes for poison, is it not possible that, in the other case alluded to by Mr. F., the strip of soft pork, acting as a medicine, counteracted the poison, and cured the cow that he says was so soon ready to eat more of the cherry leaves if she could get at them?

PREPARE FOR SPRING WHEAT.

Now is the time to prepare and plow your ground for spring wheat—and thus save time when pressed in the spring. Manure well, and plow it in deep. Wheat roots strike deep for nourishment and the gases of manure come up by evaporation. Harrowing in wheat is a fatal error. It dries and evaporates too quick, leaving the roots to seek what they cannot find. It should be ploughed. The warm uplands are preferable for this grain.

It is gratifying to read in your paper of samples of wheat for premiums at your agricultural shows. It reminds me of my efforts and pleadings twenty years ago, with my samples of wheat on exhibition, which seemed like so much dead wood upon the leaden sensibilities of the farmers. *Then as now*, I predicted a revolution in this branch of agriculture. Sooner or later the whole mass of New England farmers, excepting Rhode Island, will raise their own bread. Four acres to every farmer, say 20 bushels to the acre, would nearly supply every State with flour and save over thirty millions of dollars per annum. These figures look large, but it is not an exaggerated statement, fixing the fair minimum of one barrel of flour to each individual per annum.

The papers state that the average crop of all the West combined this season, is but 12 bushels to the acre. Your farmers down east would not be satisfied with this. Wheat can be sown either in spring or fall, while oats, or corn, or barley, or beans must be put in in the spring, or not at all.

I planted wheat in my yard the first day of September last. It was brined and ashed. It made its appearance in four days, and in two weeks it was thirteen inches high. H. Poor.

Brooklyn, L. I., Oct., 1867.

KEYES' TOMATOES.

There is considerable discussion upon the merits and demerits of this variety of tomato, which was so extensively advertised, I may safely say, in all our of agricultural papers, representing it to be thirty days earlier, more productive, and of superior flavor, the foliage of which was without scent. With me it has failed in all these particulars, although I procured the seed from *head-quarters*, and gave it special attention. Planted at the same time and in the same row with the Tilden, Lester's Perfected, Cook's Favorite and my own Seedling, the first three tomatoes were picked from Cook's Favorite, next in order came my own Seedling, following came the Keyes and Tilden, and last Lester's Perfected. The first bushel was picked from my own Seedling, second from the Tilden, third from Cook's Favorite, fourth from Keyes' and Cook's Favorite. The scent of the foliage from Keys' tomato was much more offensive than from any of the other varieties; it was a shy bearer, in comparison with many other kinds; quality good, equal to that of the Tilton, or Lester's. I think it does not compare favorably with more common varieties. I.

Salem, Oct. 3, 1867.

WINTER AND SPRING WHEAT IN MASSACHUSETTS.

The accompanying specimens of wheat are from two crops raised on my farm the past season. As marked, one is winter and the other spring wheat. The winter wheat is known as the "Amber."

Winter Wheat.

The winter wheat was grown on 118 rods of land, surveyed after crop was harvested, which is set with apple trees, nine years from the nursery, thirty feet apart each way. In 1865 sixteen loads of barn manure were applied to the land, and thirty-five bushels of barley were raised upon it. The year before it was planted with corn, manured in the hill. The soil is a strong loam, and was ploughed six to ten inches deep three times before sowing, and 300 pounds of "Hayward's Compound" was used. The seed was sown the 20th of September, 1866, and the crop, 22½ bushels harvested about the same date, 1867. Weight of wheat 62 pounds per bushel.

Crop, in Account.

Dr.		Cr.	
Ploughing 3 times,	$6.00	22½ bu. wheat at $3.50,	$77.75
Harrowing,	.50	2158 lbs. straw,	16 00
One bu. seed,	4.00		
Sowing,	.50	Amount	93.75
Reaping and binding,	6.00	Cost of production,	33,00
Threshing (4 days),	6·00		
Winnowing,	1.00	Profit,	$60.75
300 lbs. "compound",	3.00		
Interest and taxes,	6.00		
Amount,	$33.00		

Spring Wheat.

The acre on which 23⅓ bushels of spring wheat were raised, was planted with corn last year; sixteen loads of manure from cellar and horse stable being used in the hill; producing 119 bushels of ears. The soil is a rather light loam, and was ploughed six to eight inches deep, three times in the spring. The thorough preparation of the land is in my opinion, one of the conditions of a good crop of wheat. The manure applied this year was 26 loads barn manure and 600 pounds of "Hayward's Compound." The wheat was sowed early in May, and harvested in July and August.

Crop, in Account.

Dr.		Cr.	
Ploughing 3 times,	$9.00	23 bu. wheat $3,	$70.50
Harrowing,	.75	2100 lbs. straw,	14.00
Seed, 2 bu.,	6.00		
Sowing,	.75		$84.50
Reaping 4 days,	6.00	Cost of production,	70.50
Binding,	1.00		
Threshing & winn'ing,	9.00	Profit,	$14.00
600 lbs. "compound,"	6.00		
Interest and taxes,	8.00		
Manure, ⅔ of value,	24.00		
Amount,	$70.50		

Elijah Fitch.

Hopkinton, Mass., Sept. 28, 1867.

Remarks.—It gives us pleasure to present the above statement, not only as embodying facts of intrinsic value, but as a model for those who wish to communicate results of such practical value.

Both specimens of the grain sent are plump and good. We have now five specimens of Massachusetts, and one of Vermont wheat.

CHEMISTRY.

That I may not be tediously prolix, my present remarks will be confined to a single passage in "Chemical Terms, No. 3."

"When vitality has left organized bodies, their component elements are at once seized upon by oxygen, which unites with their nitrogen and converts it into atmospheric air," &c.

With one exception, the statements in the whole paragraph are undoubtedly true, in the sense intended by the writer; yet it is to be regretted that the capacity of farmers for receiving elementary instruction is assumed to be so weak and low as to require such inelegant and unscientific language. The objectionable statement, changing somewhat the phraseology, seems to be that in the decay and dissolution of organized and azotized bodies, "oxygen seizes upon" and "unites with their nitrogen and converts it into atmospheric air." Waiving, for the present, all objection to the uncouth and somewhat ludicrous expression, that oxygen seizes *upon* the various elements and converts them, (for there is no proof that oxygen is not as much the "*seized upon*" as the seizer), the statement in relation to nitrogen is so palpably erroneous and absurd, that we are unwilling to believe that the author of "Chemical Terms" has so far forgotten first rudiments as to put forth the statement in sober earnest. Perhaps after the manner of pedagogues, he adroitly combines an intentional error with numerous truths, to test the critical acumen of his pupils.

In the decay of azotized matters, some have maintained that oxygen combines with nitrogen and forms, not atmospheric air, but nitric acid; many admit that the nitrogen passes off into the atmosphere as a simple uncombined element, while the fact is too obvious to be denied, not only to chemists but to every careful observer of nature, that "ammonia, a combination of hydrogen and nitrogen, is a constant product of the decomposition of organic substances containing nitrogen."

The merest tyros in chemistry well understand that atmospheric air is, in no sense, a chemical union or combination of elements.

Why oxygen should be accused of leaving for awhile its most indifferent and peaceful association with the superabounding volume of nitrogen in the atmosphere, that it might "seize upon"—that for which it has no passion and only a feeble affinity—some humble quantity of nascent nitrogen, or some nitrogen in loving union with some other element, "converting it into atmospheric air," and subjecting it to the same indifferent treatment accorded to atmospheric nitrogen in general, is more than we can understand.

I. B. HARTWELL.

Wilkinsonville, Mass., Sept. 30, 1867.

AN ARGUMENT FOR THISTLES, AND HOW TO DESTROY THEM.

I frequently see in your paper and others, objections to Canada thistles, with ways suggested to get rid of them. Now I am in favor of the thistle. I never had too many of them on my tillage land. They make good fodder for any kind of stock. When in hay they want as much drying as hay and no more. I have cut thistles in my pasture for fodder, and find that when clear they need but little drying, as when considerable mouldy any stock will eat them and do well on them, but if they are thoroughly dried they are too sharp for stock.

Where thistles of any kind grow freely, I know there is good land for grass, grain, or other crops. I do not want any better recommendation of any cultivated land than to know that thistles grow freely. But I do not want them in my pasture, as I think they are an injury there. Unless too severely stocked, cattle will not eat the feed where the thistle grows thick. I have mowed small patches in my pasture, and find that after they are wilted by a little rain or dew, the stock will eat them. But if the object is to drive them out of the pasture, the right time to mow them is said by many to be in the old of the moon in August. I have better success in mowing them later in the season, because the longer they stand up the larger the cavity in the stock becomes, and the surer you are of killing them. I think the rain that gets into the cavity of the stock rots and kills the thistle. With such mowings for two years you will not have many thistles in your pasture.

ORISON FOSTER.

Tunbridge, Vt., Oct. 1, 1867.

HOW TO MAKE WINE FROM GRAPES.

Can you give the particular information of the process of manufacturing wine from grapes?

Kendall's Mills, Me., Oct. 1, 1867. D. B.

REMARKS.—Those who preserve the FARMER will find directions for wine or cordial making in one of the numbers about a year ago. The following method is recommended by a correspondent of the *Country Gentleman*. It is for a barrel of "Grape Wine":—"Get a new oak forty gallon cask, five or six bushels of grapes, and 100 pounds of A. No. 1 hard sugar. Pick the grapes carefully from the stems, rejecting all unsound ones, put them into tubs and fill to cover with water. Let them stand 24 hours, then mash in some convenient way; leaving the pulp and liquor to stand again 48 hours, and then strain into other tubs. In the operation avoid contact with all metals, especially iron, because it gives a dirty color, and brass and copper because they are poisonous. After the first straining wash, and wash again the seeds and pulp with a little water each time, and all the desirable soluble matter of the grape will be obtained. Distribute the liquor into tubs and add the 100 pounds of sugar and water sufficient to make 45 gallons, in all. Put 40 gallons into the barrel, reserving the five gallons to fill the cask from day to day, as the spume works off at the bung. When the active fermentation has passed, say in the course of three or four weeks, bung up tightly. In from three to six months a palatable liquor will have been developed, and if I am rightly informed, the 100 pounds of sugar will have changed, first into grape sugar, and then into 50 pints of absolute alcohol."

BEES AND BEE-BREAD.

It appears that I did not convince your correspondent "F." that his bees did not perish for the lack of bee-bread; neither do I believe they died from that cause. If he lives in a region where bees can't collect enough bee-bread to keep up breeding through warm weather, my advice to him is, either remove to some place where the land is better, or else sell his bees. I don't understand why it is that some of his bees die for a lack

of bee-bread, and others do not. His bees must leave off breeding very early in the summer, to have them die of old age. Bees hatched in September can be found in the hive in April, and May, often. This any bee-keeper can vouch for, who has had an Italian queen introduced in the month of September.

Broods cannot be found in any hive which has not been fed, later than October 15, and in most hives after October 1st. I do not want my bees to commence breeding earlier than the first of March, and then, if we have a few warm days, I give them a substitute for bee-bread, which they will carry in enough of, in one hour, to last them two or three weeks. I mix wheat flour with rye meal, and they will carry in as much of it in one hour, as they will of rye meal in six.

If "F.," or any other bee-keeper, will put some rye meal in a warm place in the spring, and after the bees are well at work, put in some flour with the meal, he will soon see ten bees where there was only one before. I have used flour for a number of years, and I never knew or heard that any other bee-keeper in the country used it. If "F." will come to Wenham, I will show him fifty-one stocks of bees, which did not have in September, 1866, one pound of honey to a hive; and now those fifty-one stocks have increased to eighty-five, and have stored *one ton of surplus honey*.

The colonies which carry in rye meal first, and seem to work in it most, always prove to be the ones which swarm first, and store the most honey. We have lost bees in the same way in which "F." has; but we know that they starved with plenty of honey in the combs. There was no winter passage through the combs. Out of thirty Langstroth's hives, which one bee-keeper wintered bees in last winter, only one was lost; and in this one he failed to make the winter passages through the combs. H. Alley.

Wenham, Mass., 1867.

APPLE BLOSSOM—QUERY.

Why is it that the apple trees which flowered so abundantly last spring, have so little fruit on them? Because the vitality of the trees was so far exhausted in maturing so many flowers that they were unable to carry out fruit —*Farmington, Me., Chronicle*

Think so? Nature at fault! Did you ever know a good apple crop when there was a scarcity of flowers? Rather, there is a defect in the flowers themselves, or there is some unfavorable influence which acts upon the flowers to destroy their vitality, to be looked for, than a superabundance.

We cannot conceive that it much more seriously exhausts a tree to produce a crop of flowers than a crop of leaves. It is the fruit which calls for and must be supplied with material or food that exhausts.

There is sometimes a disparity in the relative proportion of the sexes, observable in the flowers of the apple tree, as well as in other fruit flowers, well known to horticulturists as a cause of sterility.

Climatic changes will be shown, probably before many years, from careful observations, now being made in this State and Massachusetts, to account for much of the disappointment which we occasionally experience when our orchards are seen to be in full bloom, and we confidently expect an apple crop.

Just how hot, or just how cold it has to be to destroy the blossoms is not, as yet, ascertained, as far as I am aware; but it is found that there is more danger from heat than from cold, at the season of flowerage.

An extreme hot afternoon with a clear sunshine, the glory and beauty of the day and of the season, and in one to three days look at your beautifully full blown apple trees and, behold, where are those delicately variegated flowers, in which, but as yesterday, the hum of a thousand voices might be heard? They are withered, scorched, dried up and falling off, by a kiss from old Sol, as he came forth in his glory, to bid the earth awake and bring forth her fruit in due season. O. W. True.

Farmington, Me., Sept. 27, 1867.

CATTLE STANCHIONS.

In your last issue I notice a communication from "A. L. W.," Hope, Me., informing us that he uses a "kind of stanchion for cattle that are as easy as chains, while they are more safe, convenient, and much better every way;" but he neglected to tell us how they are constructed.

As I feel much interest for the comfort of all dumb beasts, and especially in keeping cows neat and clean, as well as safe and comfortable, I would be obliged to him if he would inform us through the columns of the Farmer, how to construct the stanchion he uses.

HARVESTING WHEAT.

Why will not farmers learn to cut their wheat while the kernel is soft? By doing so they would get more and much better flour, than they do to let it stand till it is fully ripe, and also avoid much of the risk of rain storms during the harvest, as it will bear more wet without injury than when ripe. L. D. Corliss.

Oxford, N. H., Aug. 21, 1867.

CURES FOR CATARRH.

I see an inquiry for a cure for chronic catarrh, in your paper, which I think I can answer satisfactorily, though I am not an M. D., nor the son of an M. D. If "C. A. M." will smoke a pipeful of smoking tobacco, three times a day, in an ordinary pipe and swallow the smoke, then breathe it out of the nostrils, and continue it faithfully for two months I am confident the catarrh will leave him as it did me after being afflicted two years.

Ripon, Vt., Sept. 28, 1867. Rusticus.

Remarks.—We think if the catarrh didn't leave after such treatment it must be a pretty tough customer. While our hand is in, we may as well give another "cure," and save somebody a doctor's bill. Take a teaspoonful each of sulphur and of tar, and after mixing them well together set fire to the compound and inhale the smoke; having first cleared the nose and head by the use of snuff, or salt and water.

COAL TAR FOR A ROOF.

I wish for the necessary information as to time and manner of applying coal tar to the roof of a barn which was built the present season, and covered with sawed fir shingles. The size of the building is 25x40. Roof rather steep. About what quantity will it need?

Stephen Chandler.

Fryeburg, Me., Sept. 23, 1867.

Remarks.—We cannot answer these questions. Our impression is that it would be better to employ an experienced workman, than to attempt to do the job yourself.

CURE AND PREVENTION OF BOTTS.

Take of mullein roots (or roots and leaves, or leaves or the top in blossom) three quarts, dry or green; boil in two or three quarts of water, down to one quart, which will be black like coffee. Drench

the horse, and at once the cure is completed, with no harm to the horse. The medicine is slightly loosening to the bowels. To prevent horses having botts, give in feed of oats, meal or fine cut, two or three dried leaves of mullein, rubbed fine in the hands, once a week. That gathered in blossom is best. VAN DOORN.

Vermont, Oct. 1, 1867.

CATTLE STANCHIONS.

A writer, without name, in referring to my article on cattle stanchions in the FARMER of Aug. 17, says that I neglected to tell him how to construct them. I will reply by saying that the stanchions that I use are the Safford Patent.

Hope, Me., Sept. 30, 1867. A. L. W.

BLACK KNOT.

Mr. H. G. Allen, of North Bridgewater, Mass., informs us that he has been very successful in the treatment of the black knot on his plum trees by cutting the knots off carefully and applying to the wound a little spirits of turpentine.

CLUBFOOT.

This is one of the troubles which often discourage those who attempt to raise cabbages, &c. We were informed by a gardener, the other day, that by planting in hills where they are to grow, and throwing on a handful of ashes after covering the seed, he is not troubled with this disorder in his plants.

AGRICULTURAL ITEMS.

—Have you any implements rotting or rusting out in the weather?

—Barton, Orleans county, Vt., produced 1177 tubs or 62,562 pounds of butter during the months of August and September.

—A correspondent of the *Country Gentleman* says that farms can be bought now in Central Illinois, for about the figures of ten years ago.

—Including the permanent improvements of Mr. Mechi's farm, it is said the cost per acre is equal to $500.

—The quantity of sorghum grown this year in Ohio, Indiana and Illinois, is said to be much less than last year or the year before.

—Henry Daniels, of Williamstown, has a cow only 14 months and 27 days old, which has given birth to a large and healthy calf.

—The Agriculturist, Jucunda and other choice eastern strawberries fail to meet the expectations of Western cultivators.

—The *Journal of Horticulture* says that Gladiolus can be raised from seed, and perhaps better flowers be obtained than from imported bulbs.

—The *Prairie Farmer* says that one pint of strained honey mixed with two gallons of water, will make excellent vinegar, after standing three weeks.

—The Utica *Herald* of Oct. 8th, quotes the price of cheese from private dairies at 14 to 15c, from factories 14¾ to 16c, with some prime extra at 17c per lb., and says, "the quantity of fine cheese in the country is quite limited and prices for our best factories it seems to us must advance."

—A fat cow of Durham grade was recently slaughtered in London, which weighed when killed 1950 pounds, and yielded 340 pounds of rough tallow.

—It is reported that an agricultural society, somewhere in the State of New York, offers larger premiums for butter and cheese than it does for horse-racing.

—The grape crop along the lakes is good, but on the Atlantic coast from Maryland to Massachusetts there is great complaint of the fruit being late and much injured by the rot, in consequence of the unfavorable season.

—On the 22d of August, an ox belonging to Mr. Alvin Morse, of Newfane, Vt., was missed from his pasture. Nine days after he was found in a piece of woods with his head between two trees where he had remained for this time unable to obtain any food or even to lie down.

—Josh Billings, in describing the horse fair of the Billingsville Agricultural Society, says: "There was tew yoke ov oxen on the ground, besides several yokes ov sheep, and a pile of carrots, and some wosted work, but they didn't seem to attract enny sympathy. The people hanker for pure agricultural hoss-trots."

—A new grass is springing up in the Southern States. It appears to be a dwarf clover, is very thick set, covering the earth with a beautiful carpet of green. It is much relished by cattle, and is a complete exterminator of Bermuda, joint, sedge, and other grasses. In Middle Georgia it is very abundant and is attracting much attention.

—There is a tree standing on the farm of Levi Graves, in Leverett, Mass., that rises from the ground by two distinct trunks, standing a foot apart. Each trunk is more than a foot in diameter, and straight and well formed. They run up twenty feet or more, and then join in a solid single trunk, forming a beautiful top like any single tree.

—In his address at the late Pomological Convention at St. Louis, Hon. Marshall P. Wilder alluded to the fact that history informs us that "the planting of vineyards in Italy had so much increased about A. D. 85, that agriculture was thereby neglected; on which account Domitian issued an edict prohibiting any new vineyards to be planted in Italy, and ordered one-half of those in the provinces to be cut down."

—It appears that drought this year has prevailed over a wide extent of country. In the western part of New York it has been severe, while in the eastern and middle portion of the State there has been comparatively little rain since last July. In the dairy region the supply of after feed is much less than usual. The editor of the Ohio *Farmer*,

in a recent tour from Cleveland to Pittsburgh, found the farmers feeding hay to their cattle as in mid winter. A correspondent of the *Country Gentleman*, writing in central Illinois, says half the wells in the county are waterless, and pasturage is very short. This has caused a rush of cattle to market and brought prices down as low as 2½a3c per lb., live weight, for good thin steers.

—Italy continues to supply large quantities of cattle to France.

—In Florida, peaches will not grow. Where peaches end, oranges commence.

—A few years ago, a committee was appointed by the House of Commons, to examine and report as to a remedy for the hop louse, but could find none better than hand picking.

—Several capitalists of Dutchess county, N. Y., have recently purchased 1200 acres of land, on the Lake Shore railroad, between Dunkirk and Erie, for extensive vineyard planting. Germans from the Rhine districts are to be obtained as laborers.

—Just now the Kerry cattle are commended, because they thrive in cold climates and on little food, and give such rich milk. In England a Kerry cow is valued at $650. It is suspicious that fancy stock is always scarce.

—Mr. T. Jones, of South Hadley, Mass., who has three acres in strawberries, says in the *Homestead*, that after having tried more than twenty varieties he has settled down on the Wilson and Fillmore for the main crop, and the Early Scarlet and Triomph de Gand for early and late.

—Anxious to help the speculators in their blood-chilling stories of the drought, a western paper records the fact that in some parts of Illinois the drought is so severe that not only are the wells destitute of water, but the holes themselves have dried up.

—The cattle reporter of the *Prairie Farmer* says, "it will cost farmers 10 cents per lb., at the present price of corn, to make pork, and as they cannot reasonably expect to realize over $6a6.75 for live weights, it is to their advantage to sell their grain and send in their hogs, although but partially fattened.

—Having been often told that anything would do for seed potatoes, a correspondent of the *Rural New Yorker* planted four rows of twenty hills each, in the centre of his field with the following result:—

	Marketable	*Small.*
1 large potato in a hill yielded	67	24
4 small " " " "	53	37
4 cut " " " "	61	37
8 eyes only " " "	7½	13½

—On opening the State Fair of Iowa, President Melendy, in the course of his remarks, said: "We do not desire a great overshadowing federal institution, which shall attempt to direct or control agricultural matters. We hang our hopes for agricultural progress in this country upon the common schools, the State agricultural colleges, the agricultural newspapers, and agricultural associations established so thickly throughout the country."

American Short Horns in the Royal Stables.—We recently noticed the arrival of Mr. H. O. Sheldon's shipment of New York Short Horns in England, and the fact that the animals were sent into quarantine. The statement is now made in the *Country Gentleman* that Mr. Tait, bailiff to her Majesty, has tendered to Mr. Page, who has these cattle in charge, the use of the royal stables at Windsor Park, and the privilege of offering them for sale in connection with the herd of the late Princess Consort, which was to be sold on the 16th of October.

We regret to learn that the farm buildings of Mr. Sheldon, at Geneva, N. Y., were recently destroyed by fire, with the loss of one of his Duchess cows and three calves.

From Dr. Holland's new Poem, "Kathrina."

A DAY IN AUTUMN.

The breezy days
Over whose waves my buoyant life careered,
Rolled to October, falling on its beach
With bursts of mellow music; and I leaped
Upon the longed-for shore; for, in that month,
My dear betrothed deferring to the stress
Of my impatient wish, had promised me
Her hand in wedlock.

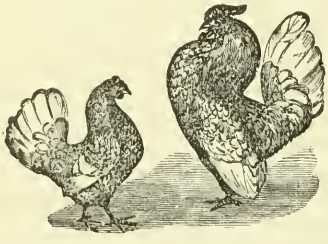
Ere the happy day
Dawned on the world, the world was draped in robes
Meet for the nuptials. Baths of sunny haze,
Steeping the ripened leaves from day to day,
And dainty kisses of the frost at night,
Joined in the subtile alchemy that wrought
Such miracles of change, that myriad trees
Which pranked the meads and clothed the forest glooms
Bloomed with the tints of Eden. Had the earth
Been splashed with blood of grapes from every clime,
Tinted from topaz to dim carbuncle,
Or orient ruby, it would not have been
Drenched with such waste of color. All the hues
The rainbow knows, and all that meet the eye
In flowers of field and garden, joined to tell
Each tree's close-folded secret. Side by side
Rose sister maples, some in amber gold,
Others incarnadine or tipped with flame;
And oaks that for a hundred years had stood,
And flouted one another through the storms—
Boasting their might—proclaimed their pique or pride
In dun, or dyes of Tyre. The sumac leaves
Blazed with such scarlet that the crimson fruit
Which hung among their flames was touched to guise
Of dim and dying embers; while the hills
That met the sky at the horizon's rim—
Dabbled with rose among the evergreens,
Or stretching off in sweeps of clouted crimson—glowed
As if the archery of sunset clouds,
By squads and fierce battalions, had rained down
Its barbed and feathered fire, and left it fast
To advertise the exploit.

In such pomp
Of autumn glory, by the simplest rites,
Kathrina gave her hand to me, and I
Pledged truth and life to her. I bore her home
Through shocks of maize, revealing half their gold,
Past gazing harvesters with creaking wains
That brimmed with fruitage—my adored, my wife,
Fruition of my hope—the proudest freight
That ever passed that way!

BANTAM FOWLS.

The Bantams, though extremely small in size are elegantly formed and beautiful birds. They are the Lilliputians of the poultry tribe; very domestic in their habits, and often making their nests in the kitchen, if permitted to do so. They require but little food, and will thrive when cooped up in a small yard, if supplied with dry ashes, sand and sunshine. Mr. Bement says they arrive at maturity early, are faithful sitters, good mothers, and will lay more eggs, though small, than any other variety. Still they must be considered rather as objects of curiosity than utility. But if "a thing of beauty is a joy forever," may not these pugnacious, active, pompous little creatures be ranked with those cheap amusements which please, occupy, and instruct the little ones of our households, though the more sedate heads of the family may prefer the stately Dorkings or Brahmapootras?

The large cut shows a common variety of Bantams. In the small cut is represented the Sebright Bantam, which is pronounced by



Mr. Bement as "the prettiest of all domestic fowls." He says one of the most remarkable characteristics of the Sebright cock is the total absence of both hackle and saddle feathers; he is also perfectly "*hen tailed*," that is, devoid of sickle-feathers; the principal feathers being straight and forming a square tail, like that of the hen, perfectly upright and not inclining to either side. The comb must be double, terminating in a well-formed point, while the legs and feet are blue, and wholly free from the least appearance of a feather. There are two distinct varieties, well known, one as the "Golden-laced," the other as the Silver-laced" Bantam. Every feather from the head to the tail of a well-bred Sebright is "laced" or bordered all round the edge with a line of pure black, about one-sixteenth of an inch in width.

The gait of a Sebright Bantam is the very extreme of self-esteem, vanity, and self-assurance, and when silently walking on a lawn in search of insects in the grass, or hurrying with the most agile and noisy impatience from the too near advance of your favorite dog to some friendly covert of evergreens, it is impossible to conceive a more lovely ornament to your grounds, or one that claims more general admiration and astonishment from those who thus see them for the first time.

COMPARATIVE VALUE OF FODDER.

We should like to know the comparative value, or ratio of value, of English hay, rowen, Hungarian grass, and green cut oats as food for milch cows. Also after cows are housed for the winter, how they should be fed? What quantity of hay, root crops, shorts, fine feed, oil meal or middlings or of either, should be fed to them daily? We rarely find a farmer who can tell us how much hay, in weight, a cow will ordinarily consume a day, either with or without other food. INQUIRER.

REMARKS.—The inquiries of our correspondent are searching—they go deep. We doubt whether the exact information he desires is attainable here, or in any other country; and yet, they are the very things we ought to know. Perhaps the *Massachusetts Agricultural College* will shed light upon them, when it is well under way. We find tables in the scientific books which may afford some gratification to the reader. One of them is prefixed by the remarks, that "in the case of the ox the daily waste or loss of muscle and tissue requires that he should consume 20 to 24 ounces of gluten or albumen, which will be supplied by any of the following weights of vegetable food:—

English hay . . .	20 lbs.	Turnips	120 lbs.
Clover hay	16 "	Cabbage	70 "
Oat straw	110 "	Wheat, or other white grain . . .	11 "
Pea straw	12 "	Beans or peas . .	6 "
Potatoes	60 "	Oil cake	4 "
Carrots	70 "		

If common hay be taken as the standard of comparison, then, to yield the same amount of nourishment as 14 lbs. of hay, experiments on feeding made by different persons, and in different countries, say that a weight of the other kinds of food must be given, which is represented by the number opposite to each article in the following table:—

Hay	10 lbs.	Carrots, (white)	45 lbs.
Clover hay . .	8 to 10 "	Mangold wurtzel	35 "
Green clover .	45 " 50 "	Turnips . . .	50 "
Wheat straw .	40 " 50 "	Cabbage . . .	20 to 30 "
Barley straw .	20 " 40 "	Peas and beans	3 " 5 "
Oat straw . . .	20 " 40 "	Wheat	5 " 6 "
Pea straw . . .	10 " 15 "	Barley	5 " 6 "
Potatoes . . .	20 "	Oats	4 " 7 "
Old potatoes . .	40? "	Indian corn . .	5 "
Carrots, (red) .	25 " 30 "	Oil cake . . .	2 " 4 "

Another statement is, that the generally nutritive value of different kinds of food has also been represented *theoretically*, by supposing it to be very nearly in proportion to the quantity of *nitrogen*, or of *gluten*, which vegetables contain. Though this cannot be considered as a correct principle, yet as the ordinary kinds of food on which stock is fed contain an ample supply of carbon for respiration, with a comparatively small proportion of nitrogen, these theoretical determinations are by no means without their value, and they approach, in many cases, very closely to the practical values above given, as deduced from actual trial. Thus assuming that 10 lbs. of hay yield a certain amount of nourishment, then of the other vegetable substances it will be necessary, according to theory, to give the following quantities, in order to produce the same general effect in feeding:—

Hay	10 lbs.	Carrots, (red) .	35 lbs
Clover hay	8 "	Cabbage . . .	30 to 40 "
Vetch hay	4 "	Peas and beans	2 " 3 "
Wheat straw . . .	52 "	Wheat	5 "
Barley straw . . .	52 "	Barley	6 "
Oat straw	55 "	Oats	5 "
Pea straw	6 "	Rye	5 "
Potatoes	28 "	Indian corn . .	6 "
Old potatoes	40 "	Bran	5 "
Turnips	60 "	Oil cake	2 "
Mangold-wurtzel .	50 "		

If the feeder be careful to supply his stock with a mixture or occasional change of food—and especially, where necessary, with a proper proportion of fatty matter—he may safely regulate, by the numbers in the above tables, the quantity of any one which he ought to substitute for a given weight of any of the others—since the theoretical and practical results do not in general very greatly differ.

We have drawn these remarks mainly from Prof. Johnston's *Elements of Agricultural Chemistry*, as the nearest approach of anything we could find, as replies, to the above inquiries. Our correspondent has begun a good work; we wish he would continue it by making exact experiments with his stock the coming winter, and let us have the results in the spring. Who so well qualified as himself for this, now that he has the spirit of the matter in his mind, and is really desirous to know the facts in the case?

In addition to the foregoing, we copy the following results of careful and laborious experiments conducted under the direction of the Massachusetts Board of Agriculture by John Brooks and Moses Newhall, with the dairy on the farm of the State Reform School at Westborough in 1856. The details, as published in the Report of the Secretary of the Board, are very minute. Each animal, as well as the food it consumed and the milk it produced, was separately weighed, and the results given in elaborate tables, for which we have not space. It will be seen that English hay is put at $15 and meadow or swale hay and cornstalks at $10 per ton; shorts at one and a

half cents, and carrots at half a cent a pound, &c. Consequently, proper allowance can be readily made for the different values of these articles in different sections and at different times. The fact of the decrease of the cows in flesh when fed on coarse meadow hay and cornstalks seems to show that the value of these articles compared with English hay is usually placed too high.

Fourteen Cows--From Jan. 1 to 20.

5,085.60 lbs of meadow hay and stalks at ½c ₱ lb	$25 41
5,600.00 lbs carrots ½c ₱ lb	28 00
162.00 lbs shorts 1½c ₱ lb	2 43

Making the cost of keeping 14 cows 20 days . $55 84

The same cows gave, in 20 days, 3,570.40 lbs of milk, which cost 15.64c the gallon of 10 lbs. The food proved insufficient, and the 14 cows lost in 20 days 210 lbs in weight.

Ten Cows--From Jan. 20 to Feb. 9.

3,588.80 lbs meadow hay ½c ₱ lb	$17 94
4,000.00 lbs carrots ½c ₱ lb	20 00
500.00 lbs shorts 1½c ₱ lb	7 50

Cost of keeping 10 cows 20 days $45 44

The same cows gave, in 20 days, 2 715 60 lbs of milk, costing 16 72c the gallon of 10 lbs. The feed proving insufficient the 10 cows lost in 20 days 244 lbs of their weight.

Eleven Cows--From Feb. 10 to 29.

3,100.60 lbs stalks ½c ₱ lb	$15 50
4,400.00 lbs carrots ½c ₱ lb	22 00
550.00 lbs shorts 1½c ₱ lb	8 25
1,010.00 lbs meadow hay	5 05

Cost of keeping 11 cows 20 days $50 80

The yield of milk from these cows, in 20 days, was 3,787.40 lbs, costing 13.41c the gallon of 10 lbs. The cows gained 109 lbs in weight.

Fourteen Cows--From March 1 to 20

4.894.60 lbs of English hay, cut, ¾c ₱ lb	$36 72
5,600.00 lbs carrots ½c ₱ lb	28 00
700.00 lbs shorts 1½c ₱ lb	10 50
560.00 lbs meadow hay ½c ₱ lb	2 80

Cost of keeping 14 cows 20 days $78 02

These fourteen cows gave, in 20 days, 5,445.20 lbs of milk, which cost 14.32c the gallon of 10 lbs. The gain in weight was 8.99 lbs.

Sixteen Cows--From March 20 to April 9.

5,632.80 lbs meadow hay valved at ½c ₱ lb	$28 16
3,200.00 lbs carrots ½c ₱ lb	16 00
3,200.00 lbs ruta bagas ½c ₱ lb	16 00
1,920.00 lbs cob meal 1½c ₱ lb	24 00

Cost of feed consumed in 20 days $84 16

The milk produced by these cows, in 20 days, was 6,058.20 lbs, which cost 13.89c the gallon of 10 lbs. 8 lbs of the hay were cut and mixed with 6 lbs of cob meal, and given in two feeds to each cow daily. The feed in this taial proved less nutritious than that consumed in the last, and the cows lost in weight 890 lbs.

Sixteen Cows--From April 10 to 29.

5,160.00 lbs English hay ¾c ₱ lb	$39 70
1,600.00 lbs carrots ½c ₱ lb	8 00
1,600.00 lbs ruta bagas ½c ₱ lb	8 00
1,920.00 lbs cob meal 1½c ₱ lb	24 00

Cost of feed for 16 cows 20 days $79 70

The same cows gave of milk, in 20 days, 5,591 lbs, which cost 14.25c the gallon of 10 lbs. 8 lbs of the hay were cut and mixed with the cob meal, and given twice a day. These cows lost 314 lbs in weight.

Sixteen Cows--From April 30 to May 19.

5,196.40 lbs English hay ¾c ₱ lb	$38 97
1,600.00 lbs ruta bagas ½c ₱ lb	8 00
1,600 00 lbs carrots ½c ₱ lb	8 00
1,920.00 lbs Indian meal 1½c ₱ lb	28 80

Cost of keeping 16 cows 40 days $83 77

The same cows gave, in 20 days, 5,786 20 lbs of milk, costing 14.47c the gallon of 10 lbs. Gain in weight 337 lbs.

The whole loss of weight made by the cows, in these seven trials, was 1,658 lbs; the whole gain was 1,255 lbs; leaving a balance of loss in the 140 days of 403 lbs. This loss is probably due to the change from green summer to dry winter feed. If so, it would appear that the feed consumed by the cows has been equal to sustaining them in the same condition they were in at the commencement of the 140 days' feeding. The average cost per day for feeding each cow in these trials of 140 days was 24.62c.

Sixteen Cows--From May 9 to June 8.

Feed was pasture grass only. They increased their milk in 20 days, 853.86 lbs, or a fraction over 2 66 lbs daily for each cow. Estimating pasture land at $40 the acre, and five acres to the cow, the cost of keeping each cow would be the interest and taxes on five acres of land, valued at $200.

Interest on $200 one year	$12 00
Taxes one year	1 00

Cost of keeping one cow half a year $13 00

Thirteen dollars divided by the number of days in half a year, gives 7.15 cents the day for keeping one cow, and $22.88 for sixteen cows 20 days. These sixteen cows gave, in 20 days, 6,640.03 lbs of milk, which cost 3.46 cents the gallon of ten lbs. The gain in weight was 484 lbs.

Eighteen Cows--From June 8 to 28.

Eighteen cows gave 8,200.20 lbs of milk in 20 days —feed, pasture grass only. Cost of keeping, for 20 days at 7.15c ₱ day, $25.74. Cost of milk in this trial a fraction less than 3.20 cents the gallon of ten lbs. The cows gained in weight 17 lbs.

Twenty-three Cows--From June 29 to July 18.

Cost of keeping twenty-three cows at 7.15 cents per day, $32 89 for 20 days. The yield of milk of the same cows was, in 20 days, 9,257 lbs, which cost 3.56 cents the gallon of ten lbs. The twenty-three cows gained in weight 210 lbs.

Twenty-two Cows--From July 18 to Aug. 7.

Twenty-two cows gave in 20 days 7,197 lbs of milk. Feed, pasture grass, only. Cost of keeping twenty-two cows 20 days, estimating pasture grass as in former trials, $31.46, making cost of milk in this trial 4.37 cents the gallon of ten lbs. The cows gained 61 lbs in weight.

Twenty-one Cows--From Aug. 8 to 28.

Twenty-one cows gave daily 309.37 lbs of milk. In 20 days their yield was 6,187.40 lbs. The feed was pasture grass, and 20 lbs each cow daily, of green corn fodder. The corn fodder was considered by the Committee to no more than make up for the deficiency, occasioned by the dry weather, in the pasture feed, and the cost would probably be no more than grass. So the cost of keeping would be $1.43 each cow, for 20 days, or $30.03 for 21 cows 20 days, making the cost of the milk in this trial 4.85 cents the gallon of ten lbs. The cows gained 142 lbs in weight.

Twenty-one Cows--From Aug. 28 to Sept. 16.

In this trial the twenty-one cows gave, daily, 279.79 lbs of milk. Their yield for 20 days was 5,595.80 lbs. The feed was pasture and twenty lbs each, daily, of green corn fodder, the same as in the last trial. The cows were the same, and their feed for 20 days cost $30.03, the same as in the last trial, but there was a falling off in milk, and the cost in this 20 days is 5.36 cents the gallon of ten lbs. The cows gained in weight 485 lbs.

Sixteen Cows--From Sept. 17 to Oct. 6.

The yield was 187.41 lbs of milk daily, equal to 3,748.20 lbs in 20 days. Cost of keeping, estimating the aftermath to be more than equal to good pasture, $1.43 each cow for twenty days, making $22.88 for sixteen cows 20 days. Cost of milk, 6.14 cents the gallon of ten lbs. Loss in weight 314 lbs.

Fifteen Cows--From Oct 7 to 27.

Fifteen cows gave in this trial 186.69 of milk daily. In 20 days their yield was 3,733.80 lbs. Cost of feed equal to good pasture, $1.43 for each cow, 20 days; for fifteen cows, 20 days, $21.45. Cost of milk, 5.72 cents the gallon of ten lbs. The cows gained 257 lbs.

Sixteen Cows--From Oct. 27 to Nov. 16.

The sixteen cows, in this trial, gave 146.40 lbs of milk daily. In 20 days their yield was 2,928 lbs. The cost of keeping, for each cow, was the same as in the last trial, making, for sixteen cows, $22.88 for 20 days. Cost of milk, a fraction over 7.81 cents the gallon of ten lbs. The gain of weight was 433 lbs.

Eleven Cows--From Nov. 16 to Dec. 6.

Eleven cows, in this trial, gave, daily, 100.08 lbs of milk, or in 20 days, 2,001.60 lbs. The same cows consumed, the fifteen first days, while at grass, 1,320 lbs of corn stover, and in the five days in the barn, they consumed 1,059 lbs of corn stover. In 20 days they consumed—

2,379 00 lbs corn stover, estimated ½c ₩ lb	$11 89
15 days in pasture, estimated 7c ₩ day	11 55
Cost of keeping eleven cows 20 days	$23 54

Cost of milk, in this trial, 11.71 cents the gallon of ten lbs. Gain in weight 86 lbs in 20 days.

Seven Cows--From Dec. 6 to 26.

Seven cows, in this trial, gave daily, 61.01 lbs of milk; in 20 days their yield was 1,200.20 lbs. They consumed—

2,754.00 lbs husks and corn stalks ½c ₩ lb	$13 77
2,800.00 lbs roots (⅔ carrots and ⅓ ruta bagas,) ½c ₩ lb	14 00
Whole cost of keeping seven cows 20 days .	$27 77

Cost of milk in this trial, 22.75 cents the gallon of ten lbs. Loss of weight in 20 days 38 lbs.

Recapitulation of the Eighteen Trials.

Number of days embraced in all the trials . . .	360
Average number of cows milked daily	15.72
Whole gain in weight of all the cows	3,430
Whole loss in weight of all the cows	2,010
Balance of gain	1,420
Average milk daily from each cow, in lbs	15.84
Total flow of milk from all the cows in lbs . .	89,643.23
Total cost of feed of all the cows	$759 30
Total cost of feed ₩ gallon of milk of ten lbs . . .	08.47
Daily cost of keeping each cow in barn	24.30
Daily cost of keeping each cow at pasture	07.15
Daily cost, five days in barn, fifteen in pasture . .	10.65
Daily cost of keeping each cow during all the trials	13.41
Average number of days after calving	144.11

FRANCE A WHEAT COUNTRY.

According to the *Revue des Economistes*, the entire extent of surface appropriated in France to the cultivation of wheat, is two thousand eight hundred leagues. Of every hundred acres appropriated to cultivation in that country, forty are devoted to this grain. It is asserted that the quantity of wheat produced in France exceeds the aggregate product of the same grain in the British Isles, Sweden, Poland, Holland, Prussia and Spain. The annual consumption of wheat per head, on an average, in France, is between six and seven bushels; in the British Isles, between five and six bushels; in Spain, between four and five; in Holland, between two and three; in Prussia much less, and in Poland and Sweden comparatively little.

Spain, next to France, is the greatest wheat growing country in Europe. Her soil is almost equally as fertile, and abounds in those mineral ingredients upon the presence of which in the soil, the success of the wheat crop is in a great measure found to depend.

In this country, the cultivation of wheat *on old lands* is often found less profitable than some other common crops. As most of the mineral ingredients requisite for the vigorous and healthy development of the plants have been exhausted by previous crops, the straw, as well as the grain, suffers for want of the needed aliment, and is, of course, imperfect in its structure, and consequently liable to disease.

By liming old lands, or dressing them liberally with ashes, in conjunction with a moderate dressing of putrescent animal or vegetable manures, they may be made to produce good wheat and at small expense. The action of the lime and ashes, if supplied in sufficient quantities, tends to render soluble the otherwise insoluble phosphates contained in the soil, and also to hasten, to a considerable extent, the fermentation of insoluble humus. Silex, or the earth of flint, so essential in the formation of wheat straw, is likewise decomposed and rendered susceptible of appropriation and assimilation by the action of both mineral and vegetable alkalies—lime and ashes.

For the New England Farmer.

CHEMICAL TERMS.---No. V.

Sulphur is an article familiarly known. It is very combustible. At a temperature a little above that of boiling water, it is melted and converted into a brown fluid. When in this fluid state, it is easily crystalized. If sulphur is heated to about four times the temperature of boiling water, it boils and is converted into a brownish vapor,—sulphur fumes,—thus showing that it is volatile. If these fumes are conducted through a tube into a jar, which is kept cold by water or ice, they are condensed in the form of a soft yellow powder, known as flowers of sulphur. This process by which a volatile substance is evaporated, and again condensed into a solid is called sublimation. In this way sulphur is purified from the earthy matters which are found with it in its native beds. These, not being volatile, are left behind after the process of sublimation.

If sulphur be heated in the open air, or touched with a red hot body, it burns with a blue flame. During this process, one part of sulphur unites with two parts of oxygen, and forms a gas, called sulphurous acid. Then if one part more of oxygen be added to this gas, it becomes a liquid, the common *sulphuric acid*, or oil of vitriol, as it is called, from its heavy oily consistence. The weight of common concentrated sulphuric acid is to water as 184 to 100. Sulphuric acid is very important in the arts and in agriculture. It is manufactured on a large scale, by converting sulphurous acid

gas, by means of nitric acid and steam, into sulphuric acid, which, as first obtained, is largely diluted with water from the condensed steam. This is afterwards evaporated until the liquid becomes of the desired density. It is difficult to expel all the water, and the concentrated acid of commerce contains three ounces of water in a pound. Sulphuric acid has a strong affinity for water, and if allowed to stand exposed to the air will attract water from the air, so as to become perceptibly heavier every day.

Sulphuric acid is a chemical agent of great power. It combines with the oxides of most metals, forming with them salts, which are called sulphates. Thus, with iron, it forms sulphate of iron or copperas; with copper it forms sulphate of copper, or blue vitriol; with zinc, sulphate of zinc, or white vitriol. With the alkalies it also forms salts; as with lime, sulphate of lime or gypsum, or common plaster; with magnesia, sulphate of magnesia, or Epsom salts, &c. All these sulphates are more or less soluble in water. Hence we see that this acid combines with various earths and converts them into sulphates, thus rendering them soluble and capable of being absorbed by the roots of plants. It is in this way that it becomes a fertilizing agent of much power. When this acid is applied directly to the soil, it should be copiously diluted with water. It is said that one pound mixed with one hundred pounds of water will destroy grass and weeds in alleys and walks; and that when applied directly to the soil as a fertilizer, one pound should be diluted with one thousand pounds of water.

Potash is found abundantly in the vegetable and mineral kingdoms. It is also found in the animal kingdom. It is usually obtained from the ashes of wood, by leaching, and evaporating the lye or solution. Ashes consist of a soluble and insoluble portion. The soluble part is made up of carbonate of potash, sulphate, phosphate and silicate of potash, and the chlorides of potasium and sodium. The insoluble part consists of carbonate and subphosphate of lime, alumina, silica, oxidized iron and manganese, and some carbonaceous matter that has escaped combustion. The ashes are leached in wooden vessels. Some lime is usually added to take up the carbonic acid. Water is then added, which dissolves the soluble portions, and is drawn off at the bottom. The lye is evaporated in iron kettles or pots; hence its name, pot-ash. When it is reduced to the consistence of a thick syrup, a strong heat is applied by which the combustible impurities are burned out. When cold it congeals into cakes. This is the common potash of commerce.

Different plants, and the different parts of the same plant, yield different proportions of potash. It is only in the juices that the vegetable salts reside. Hence the more succulent plants, and the more succulent parts of plants, yield the greatest amount on burning. Herbaceous plants yield more than shrubs, and these more than timber. Twigs and leaves yield more than solid wood. Plants that have arrived at maturity yield more potash than at any previous period. One thousand parts of the ashes of oak wood yield about two per cent. The bark of oak twigs, 4.20; vine branches, 5.5; corn stalks, 17.5; bean stalks, 20.0; sunflower, 20.0; stems of potatoes, 55.0. Feldspar contains about 12 per cent. of potash, and mica about 8. These are important ingredients in granite. By the action of the weather, granite is crumbled and decomposed, and its elements are mixed with the soil, and brought within the reach of the roots of plants.

Potash has a caustic burning taste. It has a strong affinity for water, and on exposure to the air absorbs water, and grows moist, and finally liquid. It is soluble in water. It combines with fats and oils, and forms soaps. By heat, it combines with silex and forms glass. Those vegetables, the ashes of whose stems and leaves yield the largest amount of potash, as vines, corn, beans and potatoes, require constant supplies of potash in the soil. Potash readily combines with all the acids, forming salts, which are of great use in medicine and the arts,—bitartrate of potash or cream of tartar. Bicarbonate, or saleratus, and nitrate or saltpetre, are well known in domestic use.

Concord, Mass., Oct. 10, 1867. R.

For the New England Farmer.

SAVING SEED.

The following report of the discussion of the question, "*What seed shall we save, and how shall we save it?*" by the Irasburg, Vt., Farmer's Club, Sept 23, is furnished for the NEW ENGLAND FARMER by the Secretary, Z. E. Jameson, Esq.

J. B. Fassett, opened the discussion by remarking that, according to his idea, the question is, shall we save our seed of wheat, oats, corn and potatoes out of the mass of the year's produce, or shall we take special care and labor to save the best? He believed it was as important to save the best of our field crops for seed as it was to save the best calves to raise. He believed if a man makes a practice of planting and sowing inferior seed he will run out his crops; but with care he thought we could improve in every department,—in horses, cattle, vegetables and small grains.

A. Jameson said it has been his object to take pains in saving the best seed of his corn, wheat, and oats. He runs his grain through the fanning mill and blows out all light kernels. He also washes his wheat in salt brine which floats out light seed.

He had sowed wheat every year for over forty years. Some farmers left off sowing wheat because of the weevils,—raised oats to sell and buy flour; but he preferred to raise wheat. He always intended to sow wheat where corn was grown the year before. Last

year he had a good crop, about 25 bushels on an acre. He sows the "Scotch Fife" it does not lodge on rich ground. A heavy growth of straw will not produce more than the seed. As to potatoes, when he began farming he bought a bushel, cut them fine, planted, and raised 50 bushels from one of seed. He has tried several kinds, and they gradually run out. Since the rot, the California yields the best with him of any kind.

G. B. Brewster said he thinks we agree in the saving of seed. Poor seed gives a small plant and feeble growth. He remarked, I see some of the members have brought several kinds of potatoes here to-night. I think it wrong to raise several kinds. If planted side by side they will run out and mix.

S. Flint had improved his potatoes by planting large ones, and believes planting small ones will decrease the crop.

O. M. Wells said that fifteen years ago he got a kind of potato that he liked, and he made a practice of saving in the fall enough of the large potatoes for seed and they do as well now as ever. But he let some of his neighbors have these potatoes, who ate the largest and planted the smallest, and theirs have run out.

J. B. Clement had raised this year twelve bushels of Gold Drop wheat, from one bushel sown. He was anxious to know if it is beneficial to change seed; that is, to send off and get seed of the same kind as we have, but raised on different soil.

Z. E. Jameson did not think it advisable to change seed in that way, but he approved of changing poor for good seed. The men of whom we get this good seed do not change seed but save it with care. We should imitate their example. It is also beneficial to change and get new varieties of seed whenever new varieties are produced, by accident or design, that in hardiness and productiveness surpass what we have hitherto raised. Potatoes, especially, differ much in quality. But he thought they do not mix more than a maple tree would mix with a hemlock. Plants mix through the blossom, not the root.

G. B. Brewster was well satisfied that oats changed from hill to valley, and from valley to hill do better, and has seen trials that prove the fact to his own satisfaction.

Wm. L. Jameson had taken pains to obtain oats raised on sandy land and sowed them on clayey soil, but could see no difference between them and those from seed of his own raising, when sown side by side, either while growing or after being threshed. He had changed seed corn, but believed the improvement was in the cultivation and saving seed, rather than in the mere change.

G. B. Brewster asked, Why do we have to send west for seed wheat.

J. B. Fassett replied, Because this is not a natural wheat country. Wheat deteriorates here; there it does not. He did not believe that Mr. Jameson could raise his seed 20 years.

A. Jameson remarked that when he came here, between forty and fifty years ago, this was as natural a wheat country as one could desire. He could raise wheat as easily as oats. Wheat was 75 cts. to $1 per bushel. Merchants took it in pay for goods and sent it off. I used to get 20 or 30 bushels per acre, and rye the same. But weevils came, and farmers had to stop raising it, although he continued to sow an acre or two. Sometimes he got six bushels, sometimes ten. Now we are more sure of a crop. He once sowed three pecks of rye and harvested three pecks inferior to the seed. When a young man he worked in York State, and the farmers then thought it paid to send to the white oak openings for seed.

G. B. Brewster would say that we now raise more bushels per acre than they do in the West. If a man in Wisconsin had raised a piece of wheat like mine we should have heard of it before now. In Chittenden County they raise good winter wheat. One man in this county has raised winter wheat as good as the western white wheat.

O. M. Wells said, from a number of experiments, he finds it a benefit to get potatoes and oats raised on different soils. He has tried it three or four times. He had raised of wheat at the rate of 25 bushels per acre.

Wm. L. Locke, Jr., said that, according to reliable reports, Vermont yields as much wheat per acre as any State, with one or two exceptions.

N. H. Stiles thought It is an error for a farmer to go to his heap of grain and take the average for seed; full of foul seed, it may be, and many imperfect seeds. He should sow the best and most perfect grain. There may be cases where it would be an advantage to change seed, but there are more cases where farmers would do well to save the best of their own raising.

Capt. E. Grant, did not intend to have said anything, but Mr. Jameson's remark of three pecks of rye put him in mind of a crop of wheat he once raised. It was on new land and came up well, headed out and got ripe. He was sick when it was harvested and hired it done. In the winter he threshed it out, and after working about three days cleaned it up and got about three pecks of mouse manure!

At this meeting of the club J. B. Clement exhibited half a bushel of extra onions; J. B. Fassett the product of two hills of Jackson White potatoes, and S. Flint, 17 large ones from a single hill of same variety; Wm. Lock specimens of Jacksons and Garnet Chili; Z. E. Jameson, one hill each of Early Goodrich, Garnet Chili, Cusco, Rusty Coat and Orono. Potatoes yield fairly in this section.

Z. E. J.

The best crop of rice raised in Georgia this year was put in by two men from Ohio. There are 200 acres, and the estimate is 60 bushels to the acre.

Ladies' Department.

PUT UP THE BARS.

After the milking was over,
Annie would follow the cows
Half a mile down to the clover,
And turn them in to browse.

Neat little figure is Annie,
Handling the bars in the lane,
Letting down ever so many
Just in the sunlight's wane.

Wild roses blooming beside her,
Match not her cheek's lovely red;
And the leaves trying to hide her,
Dance at her musical tread.

Witching curls peep from her bonnet—
Peep like bright birds from their nest!
And the heart—happy who won it!
Beats with a gentle unrest.

Lips may be humming a ditty,
And faces may show unconcern;
But secrets there are—what a pity
That some are too easy to learn.

Now, while the robins are nesting,
Why does she wait in the lane?
Though if white arms need a resting,
No one, of course, could complain.

Lights in the farm-house are gleaming,
And bars must be laid in their place.
But little Annie stands dreaming.
A blush on her beautiful face.

Is it late? Not that she cares now;
Ah! merry eyes, mild and brown,
Could you not tell why she wears now
Just the least mite of a frown?

Over the path by the hillside,
Some one would wander by night;
Some one who came from the mill-side,
Lured by two eyes that were bright.

Meadow and valley grow stiller,
Under the earlier stars;
Would it be strange if the miller
Helped Annie to put up the bars?

HOUSEHOLD ECONOMY.

CONTRIBUTED FOR THE NEW ENGLAND FARMER.

Breakfast.

HOW ONE WOMAN PREPARES FOR IT.

Shall I tell those housewives who look with interest adown the column of "domestic receipts," in the NEW ENGLAND FARMER,—as it comes weekly laden, as it inevitably does, with good things, "both new and old"—how they can *economize*, and give their husbands and sons and brothers, a nice cup of coffee?

First, you can *mix* your coffee, equal parts—Java and Rio—*scorch* it (not *burn* it) a nice dark brown,—it is better to scorch it often, as often as every day or two.

When you get ready to make your coffee for breakfast, have ready some scorched (*not burnt*) molasses—perhaps two table-spoonfuls, set on the stove, in a tin plate or dish, and boiled down to candy, and *scorched*. Put this into the coffee-pot when you fill it up for the table. You will need no more than two large table-spoonfuls of ground coffee, with the scorched molasses, for four persons, and if you do not let it boil more than *five minutes*, and put in a little fish-skin, to settle it, I can warrant you a most delicious cup of the coveted beverage, *economically cooked*.

And, with all, some nice *breakfast cakes*. Make your cakes of Indian meal three-fourths, of flour one-fourth. Take new milk, if you have it, if not, water, with a *little shortening*; mix the night before, with a little yeast; fry in the morning, as griddle cakes, small or large, as you choose, eat with butter, or maple molasses, or sweetened cream. A little saleratus must be added in the morning. MRS. VERMONT.

Putney, Vt., Sept. 16, 1867.

REMARKS.—Much obliged. Shall be pleased to hear again from Mrs. V. ED.

Good Yeast.

To one cup grated potato pour one quart boiling water. Add one-half cup sugar and one-half cup salt. Also, when cooled till a little more than milk warm, one cup of yeast. Put in a warm place to rise. Keep in a jug in the cellar.

Bread.

To a quart of warm milk or water stir in flour to make a thick batter, and add one teacupful of yeast. Put in a warm place to rise. When risen stir in flour sufficient to knead and make in loaves. Set them by the stove, and bake soon after they begin to rise.

Breakfast Cakes.

One cup and a half of flour, one cup and a half of Indian meal, one table-spoonful molasses, one egg. Two teacupfuls sour milk or buttermilk, in which dissolve one teaspoonful saleratus. Bake in the oven.

Coffee Cake.

One cup sugar, one cup molasses, one cup butter, one cup strong coffee, two eggs, cream tartar and saleratus, one teaspoonful each. Cloves, cinnamon and nutmeg, raisins or currants, and citron *if you can afford it*; six cups of flour. Will make two good-sized loaves.

Cookies.

Two cups sugar, two-thirds cup butter, three tablespoonfuls milk, one-half teaspoonful saleratus, just flour enough to roll thin. Roll sugar on before cutting them out. Bake in a quick oven.

Somerset, Oct. 2, 1867. M. P. B.

DOMESTIC RECEIPTS.

An Easy Chair.

A delightfully easy sewing chair can be made in a few hours from an old cane seat chair, from which the canes have been broken away, by sawing off the front legs about two inches, the back ones three or four; tack a bit of old strong carpeting, canvas, or something of the kind across the seat; make a curtain of an old small-figured dress

or of pretty print, fasten it to fall around the sides of the chair, fit a cushion to the back and one to the seat, cover it with the same, and you will have a comfortable and pretty chair in which you can *rest* while you work. This fashion of chair—in the particular of having the seat slope backwards a little was the invention of a friend of mine while suffering from a prolonged illness. Rocking chairs did not suit; she grew tired in them even faster than in an ordinary chair, and lounges were no better, while in this chair, manufactured under her superintendence, by a brother, she found just what she desired. Chairs and rocking chairs, as ordinarily made give no support to the back below the shoulders, and thereby tend to make a person round-shouldered by throwing them forward; a chair made in this way, on the contrary, allows a person to sit, giving support to the small of the back, in which case the shoulders will look out for themselves, and instead of being placed in an unnatural position with the support in the wrong place entirely, you will find yourself just right in all respects and will rest in your chair almost as well as in lying down.—*A Farmer's Daughter, in Vermont Farmer.*

Home-made Mats.—A lady correspondent of the Vermont *Farmer* gives the following directions for making mats from the smallest bits of cloth left after cutting out clothes, or preparing the materials for rag carpets. Pieces over an inch square are too large, so it can easily be seen that this way of making rugs will use up the pieces, otherwise of no account except for the rag-bag. These little bits must be strung on a cord, the edges being ravelled out so as to present a soft, fuzzy appearance and wound and sewed like the braids in a braided mat, it will be difficult to distinguish it from chenille work. In regard to colors, you must consult your own taste. The style called hit-or-miss, in which you use all colors indiscriminately, as they are most convenient, has often a very good effect, if plenty of bright colors are used; in any other case it is too apt to have a dingy look. Decided contrasts or shades of the same color are better in mats of this kind.

How to Bake Apples.—Bake without breaking the skin. Bake from three to five hours. When the pulp is perfectly tender, break the skin; if that is silken, like the cuticle of the hand, you have your fruit done. If you break the skin by baking, the heat and moisture will escape, and your apple will dry. The peel prevents evaporation, and is a good conductor of heat. Bake on paper, and there will be no dishes spoiled or needed to be washed.

Green Tomato Pickle.—Cut in thin slices one peck of green tomatoes, sprinkle them with salt, and let them stand a day or two; slice ten or twelve small onions; mix together one bottle or small tin box of mustard, half an ounce of mustard seed, one ounce of cloves, one ounce of pimento, and two ounces of tumeric. Put in the kettle a layer of tomatoes, then one of onions and spice, till all are in. Cover it with good vinegar, and let it simmer till the tomatoes are quite clear.

FLOWERS AND VINES IN HOUSES.

There are many beautiful botanical experiments which may be conducted in the house during winter, which are not embraced generally in the list of flowers and vines in our parlors and windows.

How many of our fair readers have the beautiful vine of the sweet potato running over their mantel-shelf! This pretty sight can be enjoyed by placing a sweet potato in a tumbler or other glass vessel, filled with water; passing a pin through the tuber so as to keep the lower end from one to two inches from the bottom of the vessel. Keep on the mantel-shelf, in a warm room, and every day give it the sun for an hour or two, and in a few days rootlings will begin to appear, aiming for the bottom of the vessel, and in two or three weeks the eye will begin to shoot and rapidly grow and run upon suspended twine or any little trellis-work prepared for it. The *dioscorea batatas* is the prettiest for this purpose, when it can be obtained.

The "Morning Glory" can be propagated in parlor windows, where there is some sun, to perfection during winter; it flowers with its natural colors, and the delicate little vine can be made to run over the window. A hanging vase is the prettiest for this.

Suspend an acorn by a cotton thread so as nearly to touch the water in a glass vessel, (a hyacinth glass is perhaps the best,) set upon the window or mantel, and let it remain there for eight or ten weeks, more or less, without being interfered with, except to supply evaporation of the water, and the acorn will burst, and as it throws a root down into the water, a sprout or stem will be sent upward, throwing out beautiful little green leaves; thus giving you an oak tree, in full life and health, within your parlor!

There are many of the mosses which can be very successfully grown in the house through the winter, and with the foregoing afford an interesting and refined enjoyment for the feminines of a family, and a real pleasure to all who have a taste for the beautiful to witness. We trust to see a greater inclination on the part of the ladies to introduce into their houses this most agreeable addition to their domestic pleasures.

CANNING FRUIT.

Like many others, I tried, again and again, to seal fruit cans so as to keep the fruit without moulding upon the top. I was particular in following the printed directions in general use, but found that my cans, when cold, would not be more than two-thirds full, and in a few days a white mould appeared upon the top. I finally appealed to a friend who, I knew, canned large quantities for her own use. She showed me fruit over a year old, quite fresh, the cans full, and no mould. I at once adopted her plan, which I have since followed with great success. I have no interest in the manufacture of cans, and believe that every one should do his own advertising, but I prefer that kind in which you have only the can, glass cover and rubber to use. Fruit can be kept just as well without, as with sugar; and those sealed up for pies are better without any, as they will retain their flavor far better. Brass kettles should never be used. Tin pans or kettles lined with porcelain, so as to preserve the most perfect flavor of the fruit, are the best. While my fruit is being scalded, I put a gill of cold water in each can, and fill up with hot water, putting the covers and rubber also into hot water. The fruit need not be cooked—only heated to the boiling point—unless in preparing pears or quinces, or some other hard fruits, that may require more cooking, and then only just so that a straw may be passed through, always being careful to have juice enough to cover the fruit. As soon as boiling hot, empty a can and fill; then another,

or as many as can well be attended to. Let the cans stand open until you can comfortably bear the hands upon them. Meanwhile more fruit may be heated. Cut thick writing paper in round pieces the size of the top of each can, and when the contents of the cans are cooled, slip a piece over the top of the fruit in each can, and at once fill up on top of the paper with boiling juice (saved for the purpose), and put on the covers as soon as filled, according to the directions given. I often seal up cherries and tomatoes, only for winter use, in one gallon stone jars that are small at the top, prepared just the same as for glass. Leave off the covers, seal with melted resin, adding a little tallow. Try it on a piece of cloth; if too brittle add more tallow, and *vice versa*. Cut a paper also for the top of the jar, just so it will come over the edge, and dip a piece of thick cloth into the resin, only upon one side, spread over the jar and tie down; now, with a spoon, dip and spread on the hot resin, until entirely covered, pressing down the sides with the hands dipped in cold water. When cold, if the jar is air tight, the cover will be depressed a quarter of an inch or more. But if it is level, then you must seal it over again. Those who can common sour cherries will find them greatly improved by first draining off all the juice, and then covering them with water —scald and drain off, and cover over again for sealing, canning, preserving or drying.—*Farm and Fireside.*

PARASITES IN BIRDCAGES.

Many a person has watched with anxiety and care a pet canary, goldfinch, or other tiny favorite evidently in a state of perturbation, plucking at himself continually, his feathers standing all wrong, always fidgetting about, and in every way looking very seedy. In vain is his food changed, and in vain is another saucer of clean water always kept in his cage, and all that kindness can suggest for the little prisoner done; but still all is of no use, he is no better—and why? because the cause of his wretchedness has not been found out, and until it is other attempts are but vain. If the owner of a pet in such difficulties will take down the cage and cast his or her eyes up to the roof thereof, there will most likely be seen a mass of stuff looking as much like red rust as anything, and from thence comes the cause of the poor bird's uneasiness. The red rust is nothing more nor less than myriads of parasites infesting the bird, and for which water is no remedy. There is, however, a remedy, and one easily procurable in a moment—fire. By procuring a lighted candle and holding it under every particle of the top of the cage till all chance of anything being alive is gone, the remedy is complete. The pet will soon brighten up again after his "house-warming," and will in his cheerful and delightful way thank his master or mistress over and over again for this, though slight, to him important assistance.—*Land and Water.*

The Fashions.—The fiat has gone forth, and Fashion declares that gentlemen are to wear pantaloons "as tight as possible," and ladies the smallest crinoline and the narrowest dresses. Most fashionable color for pantaloons, green; for dresses, brown. Business and morning coats will still be worn short, the variety with short tails prevailing; so also walking and even morning dresses will continue to be worn short. Eugenie has adopted them, and that settles the question, if there was any doubt about the matter before. Gentlemen will wear hats with low crowns and broad brims; and ladies will wear—what they please, provided it belongs to the *Brown* family. Full dress vests for gentlemen will be low in the roll, and have but three buttons; ball dresses will also be low "in the roll" if we may be allowed the expression—and ladies will exhibit as many buttons on their attire as the material will admit. Dress shirt bosoms will not be plaited but highly embroidered; the same may be said of the silks and satins designed for grand toilets. Both sexes seem to agree in adopting the coat sleeve. On the whole, there is quite as much similarity in the latest fashions for ladies and gentlemen as could be expected.

THE NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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DECEMBER, LAST OF THE MONTHS.

He comes! The tardy winter comes!
I hear his footsteps through the nights!
I hear his vanguard from the heights
March through the pines with muffled drums.

SOME persons think that this last of the months is one of sheer destruction—of cold, and gloom, and decay of all that was beautiful through the glowing portions of the year; that December and Death are kindred. But it is not so. "There is more dying in summer time, if we only knew it, than there is in all the year besides. There is no dying now; the hope of another May is locked at last in Nature's heart, a deep and great happiness. Winter has come and the roses are safe for June."

The answer of the old Friar to the weeping maiden was a happy one:—

"Why art thou weeping, maiden mild?"
Said a Friar grey to a lonely child.

"I weep for the swallows gone over the sea,
Who used to come and be fed by me."

"Then dry your tears," said the Friar grey,
They will all come back in the month of May."

So they will, and with them ten thousand beautiful things that the casual observer thought were dead and buried. The world is as full of life and animation as ever. Some of it may have changed form before us. Some of the birds—not all—have left us to animate other localities. They are not dead, but true to their instincts, like the Friar's swallows, will return to us another May. The hum and activity of insects are not seen and heard around us as in "the leafy month of June," but life is not extinct in them but lies buried in unnumbered forms, dormant in the earth, or under the bark of trees; in eggs, protected by the skill of those that produced them, beyond anything which the art of man has ever devised; in cocoons, impervious alike to heat, moisture and cold, and in countless numbers on the branches of our fruit trees, and in numerous other forms.

Life is still everywhere about us in DECEMBER. See how the plump buds glisten on the twigs of the trees,—the germs of future life and activity. In them lies folded the embryo that shall expand into the most beautiful and fragrant forms,—but not till their appropriate season has come, when softening rains and warming suns shall bring them forth in beauteous vigor, much—it seems to us,—as the resurrection of the just shall take place! See the cones upon the white pines, pendant,

graceful, swinging in the breeze, and scattering their tiny seeds, full of life, over the barren pasture, to clothe it, at some future time, with usefulness and beauty. So all is life and activity about us, though in a different form, more hidden and obscure, perhaps, than in the summer months. If the plant be an annual one, the whole organism perishes the first year; if perennial, the part of the organism developed in the atmosphere alone dies; but the part of the organism still below the soil, is protected, and lives securely, sheltered by its friendly covering till warm weather come again, and then from that still living, underground or subterranean stem, the same plants spring forth in the renewed beauty and freshness of youth, to go through the same brief but interesting life-changes.

As we look from our window upon acres of trees planted by our own hands, apple, pear and peach orchards, elms, pines, the larch, spruce, beech, birch, black walnut, and many other varieties, all the deciduous ones of which have shed most of their leaves, how vividly come to mind the riddles and little songs from nature that perplexed our narrow comprehension in childhood! How our poor brain was perplexed in getting at the truth wrapt up in the following homely riddle:—

In spring I look gay, clad in comely array;
In summer more clothing I wear;
But as colder it grows, I fling off my clothes,
And in winter quite naked appear!

What a wonderful thing is a tree! How would a single town or State look without one? What would the climate be? What would compensate for the loss of their fruits, their fragrant and charming flowers, their grateful shade,—aye, and the songs they sing? Where would the birds find their homes, build their nests and rear their young? The inspired writers often speak of the beauty of trees, and illustrate some of their best thoughts by them. David says the man whose delight is in the law of the Lord shall be like a tree planted by the rivers of water, that bringeth forth his fruit in season, and compares himself to a green olive tree in the house of God. In speaking of wisdom, Solomon says, she is a tree of life to them that lay hold upon her.

In his first lessons in botany and physiology, Prof. Gray says that the Washington Elm, at Cambridge—a tree of no extraordinary size—was some years ago estimated to produce a crop of *seven millions* of leaves, exposing a surface of two hundred thousand square feet, or about *five acres* of foliage!

Trees are the sanitary agents in the economy of the world we live in. By one process they abstract carbon from the atmosphere, that in due time it may be converted into wood and other vegetable substances; and by another, through the medium of their leaves, they preserve the air in a condition fit for human breathing. "We little think when we inhale the fresh air, and quaff it upon the hills, like so much invisible and aerial wine, that its purity and healthfulness come of the glorious trees. But so it is." They also supply us with numerous useful articles, whether of nourishment or of clothing, or of medicine; with timber to construct our houses, furniture, ships, carriages, and an infinite number of lesser, but scarcely less indispensable articles. They live and help us live.

There is no death in the works of an Almighty hand. What we call death shall live again. "Life shall rejoice, Winter shall break forth and blossom into Spring, Spring shall put on her glorious apparel and be called Summer. It is life! It is life! through the whole year!"

But, it is Winter. Winds howl and snows fly. Cold penetrates everywhere. Want stares into some dwellings like a wolf at the door. What is your duty? Go and deal your Master's stores.

"Here is your mission! Ye who feed
Your lavish fires! Not far,
But at your doors, your heathen are!
God's poor—your creditors—take heed."

For the New England Farmer.

PERSONAL CARE OF STOCK.

Farmers are apt to dread the coming winter, in this northern latitude, because it throws their flocks and herds so long and so entirely upon them for food and shelter. And they envy their more favored brethren in a milder clime, where the cattle graze in green pastures and care for themselves, independently of stables and cow-houses, all the year round. But among the pleasantest of my winter experiences is the personal care of the animals which this inclement season renders so dependent on man for protection and sustenance. To be sure, I am but a "one-horse" farmer, having only horse, cow, pigs and poultry to care for. Some of your heavy stock owners may smile at my simplicity, and wonder at my presumption in dictating terms to them. Well, let me have, then, only the car of my brother one-

horse farmers, who do not "despise the day of small things," and who cannot afford to hire some wild Irishman to do what they can so much better do themselves.

With me it is not simply a matter of necessity, but a source of real pleasure, to feed and tend my stock through the inclement season. And while they thrive better, it is wonderful how much less hay and grain are consumed under this arrangement. Put Tom, Dick or Patrick in charge of the stock, and as with Molly or Bridget in the kitchen, they use lavishly and waste needlessly, what they have no personal interest to save. There are, indeed, worthy exceptions to this statement. And here and there you may find a hireling who, for a wonder, makes his master's interests his own, and really loves the animals that are confided to his care. He shares their owner's pride in their sleek looks and good condition, and sometimes proves to be the best judge of their merits and capacities. And the tenderness with which he cares for those least able to care for themselves, and caresses the pet yearlings and sucklings, proves him well worthy of the confidence reposed in him. But as an offset to these rare cases of tenderness and fidelity on the part of servants and hirelings, think of the instances of neglect and cruelty to the dumb brutes that are left to the tender mercies of an irresponsible hired man, or boy, who tends them through the winter in what time he can spare from his meals and school. Think, too, how many inconvenient, vicious tricks have been taught from this source, and and how many a horse and cow have been spoiled for life from not being tended and trained under the eye of the master.

Then, again, we have only to reiterate the old adage, "a merciful man is merciful to his beast." It is merciful and noble in any man to care tenderly for those who next to his own household, claim his fostering care. If he can accomplish this through a more efficient instrumentality than his own hands, very well. If physical infirmity or disease disable him from giving that personal attention, which his personal interest would prompt, he may justly plead, "the spirit is willing, but the flesh is weak." And perhaps it is the most trying thought connected with his sickness, that the care of his stock must be left in other hands.

Of course there is some inconvenience and unpleasantness involved in this personal care of stock. And the idea of one's doing his own chores is not to be entertained for a moment by certain so-called gentlemen farmers. He would lose caste at once and forfeit irrevocably his title to gentility, were he seen with a swill-pail, or caught in the act of milking, or cleaning the stable.

And here another serious objection to the personal performance of these duties occurs to my mind. The good lady of the house dislikes very naturally the odor of the stable, and so is averse to having her liege lord go and stay where he will be sure to get its taint, and bring it back into the house with his clothes and boots and beard. Possibly she may be one of those fastidious daughters of Eve that never meant to marry a farmer, and chafes daily under the yoke. But let us more charitably suppose her to be, like every true woman and wife, heartily in sympathy with the husband of her choice, and resolved to make the most and the best of their natural lot in life,—only she must have home, *sweet* home, and not smelling like an Irish shanty. Well this is certainly a reasonable wish, and the writer would not throw a straw in the way of its fulfilment. Let the good woman only see to it that her good man is duly equipped from head to foot for his chores, so that when he throws off this stable outfit, he frees himself from those unpleasant odors. A little forethought and painstaking will easily remove this difficulty. Or suppose he does carry about in his garments something that associates him with the faithful horse, and indispensable cow? This smell of the stable is, after all, but a mild reminder of those "salts of ammonia," which every lady has at hand to revive her fainting spirit. And what true woman would not prefer a man with no worse taint than this, to one whose breath was fetid with liquor and tobacco? Yet "good society" often discard the former, and freely admit and tolerate the latter.

W. E. B.

Massachusetts, Nov. 1867.

STOVES AND FURNACES.

The season of the year has arrived when the most danger is to be apprehended from the escape of deleterious gases into dwellings, from stoves and furnaces. Let all our readers carefully examine their stoves and flues, and remove the accumulations of waste material, that the smoke and gases may have free exit into the outside atmosphere. The health of thousands is seriously impared every year by breathing the gases escaping from stoves, and many have lost their lives from this source. The saddest sight we ever looked upon was one quiet Sunday morning in March, a few years ago, when we were called to the house of a neighbor, to view the lifeless bodies of the father and mother of a family, lying in bed precisely as they sunk into repose the night before. During the night coal gas escaped from a furnace in the cellar, and from thence into the chambers, and the whole family narrowly escaped from passing to that sleep which knows no waking. As it was, the father and mother lost their lives.

Several of the products of combustion are of a deleterious nature, particularly carbonic oxide and carbonic acid. Anthracite and bituminous coals contain considerable sulphur, which partially oxidizes during combustion and forms sulphurous acid gas, and this is very suffocating and injurious when breathed into the

lungs. Sulphurous acid always escapes along with the other gases from burning coals.

It was supposed formerly that carbonic acid was a poisonous product, but it is now known not to be, but is, nevertheless, fatal to human life, when inhaled, as it operates to exclude oxygen from the respiratory apparatus. A person can be *drowned* in carbonic acid as well as in water.

But carbonic oxide is a destructive poison, and certainly and rapidly fatal to animal existence even when largely diluted with air. When coals are burned slowly and imperfectly, large quantities of this gas are formed, and if it escapes into rooms, even in minute amounts, headache, vertigo, lassitude, are sure to result.

Physicians in searching for the causes of ill-health in patients should not overlook the fruitful sources connected with the apparatus for household warmth. Examine the stoves, we say. Is the draught good? Are the dampers properly adjusted? Is the ventilation of rooms such as it should be? Look well to the stoves and furnaces.—*Journal of Pharmacy and Chemistry.*

MAKING WINE.

We notice that there is considerable discussion indulged in in various parts of the country on the subject of wine-making, and that there is much diversity of opinion as to how it should be made. Some even claim that there should be not only a liberal supply of sugar but of alcohol. It is well known that twenty-five years ago there was little Madeira made in its native island that had not an infusion of brandy, on the score that it would not otherwise "keep." But that idea has long been exploded, and neither brandy or sugar is now used in Europe in the manufacture of wine. *The pure juice of the grape only is used.* They cultivate the grape suitable to the soil and climate, and in that, and in the care of expressing and fermenting, the whole secret lies. We have no grape in this region from which we can make drinkable wine without sugar to supply the want of saccharine matter in the fruit. But this artificial application to the "must" is a very poor substitute. The truth is we have our doubts if any really fine wine can be made East of the Mississippi. Portions of Missouri, Kansas, the "Indian Territory," and so through New Mexico to the Pacific coast, good wine may be obtained. California and some of the adjoining regions, particularly, will probably become a great wine country, and may even rival the best districts of Europe. We may hit upon a grape even here in Pennsylvania that may suit the soil and climate, but it seems next to impossible that in this latitude with our short seasons we shall ever discover a grape with the necessary proportion of sugar, and without it it is useless to attempt to make good wine.—*Germantown, Pa., Telegraph.*

THE CLOSE OF THE YEAR.

The withering herbage, the falling leaf, the frosts and the chilly winds remind us that the year is drawing to its close. Nature has done her day's work, and is preparing for her night of rest. The spring came with its singing birds, and buds of promise, clothed in its robe of green, bedecked with brilliant flowers, and fragrant with perfumed breath, cheering all hearts with the inspiration of hope, and stimulating all life into renewed activity. The summer has ended and the harvest has been garnered, and now, arrived at this station on our journey, it is appropriate to halt, and cast a retrospective glance at the year that is passing away.

In the northern parts of the country, the spring was cold and wet, and it was later than usual before the soil was prepared for the reception of the seed, and as the temperature has been somewhat below the average, through the summer, both the early and the later harvests were from ten to fourteen days later than usual.

A section of country north of the Ohio river has suffered from drought, which has injured the corn and the late pasturage.

But taking the country at large, the crops have been abundant, and of fine quality. The crops of hay, wheat, oats and corn were never larger or better. Barley and buckwheat are a little below the average. The continued moisture has rendered the pastures luxuriant, and preserved them green almost to the present time, so that the cattle and sheep have required no feeding from the barn, and the entire forage crop is on hand for the winter's use. Beef cattle and sheep have come from the pastures in very fine condition, and thus the country has a good supply of provisions for the cold season before us.

The crop of grain in the entire South was remarkably good, and much larger than they have been accustomed to make. The cotton crop, according to all accounts, is much better than was anticipated, amounting to between two and three millions of bales, nearly as large a crop as it is desirable that this country should raise at present. It is probably not best for the world that its markets should de-

pend for a supply of this necessary of life, upon any one country.

This would give to that country an undue influence. Before the late war, the cotton States believed that bread riots would occur in the manufacturing cities of the North and in England upon the stoppage of the supply of cotton, and thus they would be compelled to accede to their demands. It is not desirable for the Southern people themselves that they should be so extensively devoted to the culture of one crop. It will be much better for them to raise a variety of crops, and thus secure for themselves an abundant supply of the necessaries of life. This course would tend not only to equalize property, but to increase civilization and intelligence.

The fruit crop in New England is somewhat less than the luxuriant blossom encouraged us to hope for. Still, there are apples for home consumption, although but few for exportation.

The continued moisture of August caused the squashes and potatoes to yield a larger crop of vines than fruit. These crops are small, and generally of poor quality.

The grapes, being later than usual, were overtaken by the early frosts, a misfortune to which the cultivators of the grape in this climate will be occasionally liable, unless they can find a variety that ripens earlier than any we yet have.

The health of the entire country, with the exception of a few places on the lower Mississippi, and in the extreme South-West, has been remarkably good. Not even the common autumnal fever and dysentery have prevailed to any extent.

On the whole, looking at the whole country, our people have great reason to be thankful to the Giver of all good things, for the rich supplies bestowed upon us, for the wants of both man and beast.

Our Saxon ancestors called November *Blot moneth*, Blood month, because on that month, the animals were slaughtered and salted for winter use, and some were offered in sacrifice to their Pagan divinities. This usage has been handed down from them to us. The farmers now kill their beeves and swine, and store them for winter, and our feast of thanksgiving occurs on this month. The herbage is no longer green, and the animals have ceased to grow and fatten, and can no longer live and thrive without being fed and sheltered by man. He now brings them to the slaughter, and stores them up for future use, and it is both natural and proper, that he should rejoice over the fruits of his labor, and offer sacrifices of praise and thanksgiving to the Giver of all his blessings—the Father of all his mercies.

Although there are clouds in our political horizon, and difficulties to be encountered before the country is fully restored to peace and prosperity, we can rejoice for what has already been accomplished, and we will trust in that guidance that has carried us through the trials and struggles of the past.

FARMERS' GARDENS.

The Germantown *Telegraph* says:—"We can see an improvement in the gardens of our farmers within the last half dozen years. For years we have endeavored to convince the general farmer of the necessity and advantage of providing larger gardens for their families, and of devoting more attention to their cultivation. They should raise two or three times as many vegetables as most of them now do, and they must have them earlier. They must not be satisfied with two or three messes of beans, peas, sweet corn, &c.; but they must enjoy them daily for weeks. We do all we can to point out the best sorts of vegetables and when to plant them. There should be at least three plantings of peas, four of corn; string beans all the time, lima beans for summer and winter, early cabbage, beets, lettuce, &c., as long as they will possibly last. An early crop of turnips should be put in, not less than three or four stalks of celery, and any amount of winter cabbage.

Care of Highways.—The greatest improvement that can be made on our common roads at the least expense, is to keep the loose stone from obstructing the travel on them. This should be the first, the last and intermediate duty of him who has the charge of the highway. Another important duty that requires careful attention, is to keep the sluices and ditches open, and in condition so as to prevent the water from taking its course in the middle of the road, and thus doing much damage that a very little cost and labor might have prevented.

Cost of Macadam Road.—By a careful experiment made in the summer of 1854, it was ascertained that to quarry out and break a good quality of sandstone lying within wheeling distance of the track, and to give a coating ten inches deep and eight feet wide, costs less than to lay the same with plank and sills when lumber is delivered at $6 per thousand feet.

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	16.5	1.000 .0063	1.212 .0076	1.818 .0114	2.000 .0125	2.369 .0152	3.030 .0189	3.636 .0227	4.242 .0265	4.848 .0303	5.455 .0341	6.060 .0378	6.666 .0416	7.272 .0454	7.878 .0492	8.484 .0530	9.090 .0568
		20	1.469 .0092	2.203 .0138	2.424 .0152	2.938 .0184	3.673 .0230	4.407 .0275	5.142 .0321	5.879 .0367	6.611 .0413	7.346 .0459	8.080 .0505	8.815 .0551	9.550 .0597	10.28 .0643	11.02 .0689
2d.	150		30	3.306 .0207	3.636 .0227	4.047 .0276	5.510 .0344	6.612 .0413	7.713 .0482	8.815 .0551	9.911 .0619	11.02 .0689	12.12 .0758	13.22 .0826	14.33 .0895	15.43 0964	16.53 .1031
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160	88.15 .5509	94.03 .5876	170		40	5.877 .0367	7.346 .0459	8.815 .0551	10.28 .0643	11.75 .0734	13.22 .0826	14.69 .0918	16.16 .1010	17.63 .1102	19.10 .1194	20.57 .1286	22.04 .1377
170	93.66 .5854	99.91 .6244	106.15 .6634	180		50	9.182 .0574	11.02 .0689	12.85 .0803	14.69 .0918	16.53 .1033	18.37 .1148	20.20 .1263	22.04 .1377	23.88 .1492	25.77 .1606	27.55 .1722
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190	104.68 .6542	111.66 .6979	118.64 .7415	125.61 .7851	132.59 .8287	200		70	18.09 .1125	20.57 .1286	23.14 .1446	25.71 .1607	28.28 .1768	30.93 .1928	33.43 .2089	36.00 .2250	38.57 .2410
200	110.19 .6887	117.54 .7346	124.88 .7805	132.23 .8264	139.57 .8724	146.92 .9182	210		80	23.51 .1469	26.45 .1653	29.38 .1837	32.32 .2020	35.26 .2204	38.20 .2388	41.14 .2571	44.08 .2755
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240	132.22 .8255	141.04 .8806	149.86 .9366	158.67 .9917	167.49 1.047	176.30 1.102	185.12 1.157	193.93 1.212	202.75 1.267	211 56 1.322	250		120	52.89 .3306	57.30 .3581	61.71 .3857	66.12 .4132
250	137.64 .8609	146.92 .9182	156.10 .9756	165.29 1.033	174.47 1.090	183.65 1.148	192.83 1.205	202.01 1.263	211.20 1.320	220.38 1.377	229.56 1.434	260		130	62.08 .3880	66.85 .4178	71.63 .4476
260	143.25 .8953	152.80 .9545	162.35 1.015	171.90 1.074	182.92 1.143	190.99 1.194	200.54 1.253	210.09 1.313	219.64 1.373	229.20 1.432	238.74 1.492	248.29 1.551	270		140	71.99 .4499	77.14 .4821
270	148.76 .9297	158.68 .9917	168.59 1.054	178.51 1.116	188.42 1.178	198.34 1.240	208.26 1.302	218.17 1.364	228.09 1.426	238.01 1.488	247.93 1.549	257.84 1.611	267.76 1.673	280		150	82.64 .5165
280	154.27 .9641	164.55 1.028	174.84 1.093	185.12 1.157	195.40 1 221	205.69 1.286	215.97 1.350	226.26 1.414	236.55 1.478	246.83 1.543	257.12 1.607	267.40 1.671	277.68 1.736	287.97 1.800	290		
290	159.78 .9985	170.43 1.065	181.08 1.132	191.73 1.198	202.3- 1.265	213.03 1.331	223.69 1.398	234 34 1.465	244.99 1.531	255.65 1.598	266.30 1.664	276.95 1.731	287.60 1.797	298.25 1.864	308.91 1.931	300	
300	165.29 1.033	176.31 1.102	187.32 1.171	198.34 1.240	209.36 1.308	220.39 1,377	231.40 1.446	242.42 1.515	253.44 1.584	264.46 1.653	275.48 1.722	286.50 1.791	297.52 1.859	308.54 1.928	319.56 1.997	330.58 2,066	310
310	170.80 1.067	182 18 1.139	193.56 1.210	204.95 1.281	216.34 1.352	227.73 1.423	239.12 1,491	250.50 1.566	261.89 1.637	273.28 1.708	284.66 1,779	296.05 1,850	307.44 1,921	318.82 1.993	330.21 2.064	341.60 2.135	352.98 2.206

TABLE OF MEASURES OF LAND.

This table was prepared with great labor and care by W. H. Foss, one of the assistants of J. H. Shedd, Civil Engineer of this city, and was electrotyped expressly for the New England Farmer. In the tidy form of our monthly edition it will be very convenient for reference. In his explanation of the table, Mr. Shedd well remarks that "the results of agricultural experiments cannot be compared without a knowledge of the area of the land on which each crop was grown, and as it is not always convenient to plant just an acre, or half or quarter of an acre, it becomes desirable to have at hand such a table as is given above, for reference. It will enable a person to use such a piece of land as he may happen to have, fit for the purpose, of any width or length given in the table, with the means to readily ascertain the area in square rods or square acres, in whole numbers and decimals.

The table is used in about the same manner as an ordinary multiplication table, and though it occupies but about half the space usually given to those tables, yet it contains as much information as though made up in the square form. The multiplication of any number in the diagonal rows, into another number less than itself, is a mere repetition of work that has been done before, and therefore this table is made up so that the square of a number in the diagonal rows is the first result given in the table opposite or below that number.

The darker figures represent the measurements in feet as taken on the ground. The area given in lighter figures is expressed in square rods by the upper number, and in square acres by the lower number.

There are two tables given above, having no connection with each other, except that the darker figures in the lower are in continuation of those in the upper at corresponding intervals. In the first table, the *width* of the piece of land, expressed in feet, must be looked for in the diagonal row of darker figures, the *length* in the horizontal row of darker figures at the top. In the second table the *width* must be looked for in the diagonal row of darker figures, and the *length* in the vertical column of darker figures at the left. The area will be found below the one and opposite the other.

To illustrate the use of the table :—Suppose we wish to know the contents in rods and in acres of a piece of land 140 feet long by 80 feet wide. We look in the upper table for 140 in the top row of dark figures and find it at the top of the last column but one. Following that column down opposite to 80 in the upper diagonal row of dark figures and we find it contains 41.14 square rods, or .2571 acres. Suppose we have another piece just twice as long and twice as wide ; we look in the lower table for the length, 280 feet, in the vertical column of dark figures, and for the width, 160 feet, in the lower diagonal row, and find them at the head of the second column: then following that column down opposite to the 280, we find the area to be 164.55 rods, or 1.028 acres.

Having ascertained the area of the piece of ground, and the quantity of the crop grown, the quantity per acre may be found as follows :—Suppose the piece to measure 80 feet in width by 140 feet in length, the crop be to barley, and the quantity grown 288 quarts,—annex as many cyphers to the number of quarts as there are decimal numbers in the area as given, and divide by the area. The result will be the number of quarts per acre; divide by 32 and the result will be bushels. In this case the quantity being expressed by 288, annexing four cyphers we have 2,880,000: dividing by 2571, we have 1120 quarts per acre; divide by 32 and the result is 35 bushels per acre. As by example :—

Area of a piece 80x140 = .2571, as taken from the table. Quantity 288 quarts. Annex four cyphers and divide by

$$\begin{array}{r} .2571\overline{)2880000}\,(1120 \text{ quarts.} \\ 2571 \\ \hline 3090 \\ 2571 \\ \hline 5190 \\ 5142 \\ \hline 480 \end{array}$$

Divide that result by 32

$$\begin{array}{r} 32\overline{)1120}\,(35 \text{ bushels.} \\ 96 \\ \hline 160 \\ 160 \\ \hline \end{array}$$

The process would be the same if the quantity of the crop were expressed in bushels, pounds or tons. If the quantity per square rod is sought, the same figures must be used, except that the quantity must be divided by the area in rods as expressed by the upper number in the table, instead of the area in acres, as expressed by the lower number.

The quantity of the experimental crop should be measured in the smallest denomination that is practicable, to insure accuracy in the result per acre. If by dry measure, the crop may be measured in quarts, if by weight, in pounds.

Good Courage.—Dr. Henry Boynton of Woodstock, Vt., editor of the sheep and wool department of the *Mirror and Farmer*, looks out upon the "situation" thus hopefully :—"Notwithstanding the low price of wool, our farmers would as soon think of abandoning their homes as their flocks. Nay, the knowing ones are already bestirring themselves in pursuit of bargains, shrewdly reckoning that wool can touch no lower deep—unless the bottom falls out—and that the best time to buy sheep is when they can be bought cheapest. Now is the time to buy sheep, before the stock of woolen goods is swept out of the market, and the price of wool advanced, as it must and will be."

Two and a half Acres.—It was stated at a late meeting of the Little Falls Farmers' Club, by Mr. Lewis, that a Mr. Blood, living in the vicinity of Herkimer, had kept this summer eleven cows, a bull and a horse, upon two and a half acres of land. The stock was kept in a yard and soiled. The land had been cut over several times to furnssh the necessary food during the season, but the stock had been kept. This fact might suggest the question whether our farmers, ordinarily, were getting the best results that could be had from their land.

THE RED ASTRACHAN APPLE.

This fruit which ripens from July 25 to the middle of August is described very correctly by Mr. Downing as of extraordinary beauty. It was first imported into England with the White Astrachan, from Sweden, in 1816. It bears abundantly with us, and its singular richness of color is heightened by an exquisite bloom on the surface of the fruit, like that of a plum. It is one of the handsomest dessert fruits, and its quality is good, but if not taken from the tree as soon as ripe, it is liable to become mealy. Ripens from the last of July to the middle of August. Fruit pretty large, rather above the middle size, and very smooth and fair, roundish, a little narrowed towards the eye. Skin almost entirely covered with deep crimson, with sometimes a little greenish yellow in the shade, and occasionally a little russet near the stalk, and covered with a pale white bloom. Stalk rather short and deeply inserted. Calyx set in a slight basin, which is sometimes a little irregular. Flesh quite white, crisp, moderately juicy, with an agreeable, rich, acid flavor.

American Pomological Society.—We have received the following circular, and commend it to the attention of all fruit growers:—

Cleveland, Ohio, Oct., 1867.

Dear Sir:—You are specially invited to aid the making up of the above named Society's biennial report, by contributing immediately any information you have relative to new seedlings and the values of different fruits, diseases, soils, etc., in your section of country. You are also invited to forward samples of any new Seedling or unnamed fruits by Express, to the address of the Secretary, that he may make comparisons, drawings and descriptions. Any fruit, thus forwarded, the names of which are unknown to him, will be again transmitted to Pomologists for the desired information. The American, United States, and Merchants' Union Express Companies have generously offered to transport all sample packages of fruit for this purpose FREE. Due credit will be given to contributors. Very respectfully,

F. R. Elliott, *Secretary.*

N. B.—The fee of Membership to the American Pomological Society is $2 00 Biennially, or $10.00 for Life. Remittances may be forwarded either to the Secretary, or to Thomas P. James, Treasurer, Philadelphia, Pa.

PRODUCT OF COWS.

In an exceedingly interesting article, communicated to the *Country Gentleman*, by our old correspondent, Judge FRENCH, of Concord, Mass., we find the following in relation to "milk for market," and a statement of the cost of feeding and the product of a herd of cows. A perusal of the latter by our correspondent, who makes the inquiries in another column, as to the comparative values of different kinds of fodder, may throw some light upon his inquiries:—

Milk for Market.

This forms an important item in all husbandry near large towns. Heavy trains, carrying milk alone, are daily run into Boston on most of the railways, and they bring milk collected 75 or 100 miles away. The advantages of the traffic to the farmer are, that it brings him a large amount of ready money, that he consumes his fodder at home, and so makes a large quantity of manure, and that he relieves his family from the labor of butter and cheese making.

The disadvantages are rather public than private. Milk is sold by quantity, not quality, and anything that flows from a cow's teats is milk fit for market, although we all know that for domestic use, some milk is really worth twice as much as other milk. In general the milkman recognizes no difference between the milk of a Jersey cow—four or five quarts of which make a pound of butter, and that of a native, of which twelve or fourteen quarts will scarcely make that quantity. The milk producer then only seeks for the cow that gives most milk, with no regard to quality, and so the milk business, to use a common expression, demoralizes stock raising.

A man can hardly sell milk and raise calves. He must stipulate to furnish a somewhat regular supply, because the milkman has his regular customers to supply. To do this he must maintain his stock of cows at a certain average, and he cannot well keep dry cows, or give milk to calves; or, indeed, unless he has extensive stables and pastures, pretend to raise stock. The common practice is to buy new milch cows and sell them to the butcher as they dry up, or if any are kept over, to kill or sell their calves at a week old or less. The demand of stock-growers by the milk producer is, of course, only for cows that give large quantities of milk, no matter about the quality. In the London city dairies most of their cows are grade Short Horns, or other large breeds, which are bought when full of milk—tied in the stall until the quantity of milk is reduced to a certain limit; fed liberally, in the meantime, so as to become fat, and then sold to the butcher. This is and must be the practice everywhere where milk is the staple product. A large flow of milk, aptitude to fatten and large size are the points to be regarded—the very points which are wanting in the Channel Island or Jersey cattle—admitted to be the best milkers as to quality, and the most regular in their yield.

With milk at the stable worth about four cents per wine quart, a stock of cows, as kept by our farmers, yield each an average of about 2500 quarts, worth $100, a fraction less than seven quarts a day. To do this they must be liberally fed, and those that fail must be replaced by others. I have not in mind the statistics of milk dairies, but give estimates gathered from my neighbors. The quality of the pasturing is, of course, an important element, as pasturing is mainly relied on for five months in summer. In winter shorts and oil meal, with whatever roots can be produced, are liberally fed with hay, to keep up the flow of milk to the average named.

Governor Boutwell's Cows.

Since I began this letter I have visited the dairy of this distinguished gentleman at Groton. Although the Governor is, perhaps, best known just now as a radical politician, not ardent in his support of the President, yet he carries into his agricultural affairs the mathematical accuracy which made him so efficient as first commissioner of internal revenue. He is doing what most of us, who do not labor regularly with our own hands, fail to do—that is, making his farm *pay*.

He has a beautiful stock of Ayrshire cattle, with some Jerseys. He keeps an accurate account of the milk yielded by each cow, having it weighed morning and night, every Wednesday, and takes that as the average for the week. From his books he has given me the following notes, which contain some valuable statistics of the cost of maintaining a stock of cattle, as well as good suggestions as to the various kinds of feed, and the manner of preparing it.

The question of the economy of cutting fodder, and of cooking it, depends much on the value of fodder and of the products of the dairy.

The statement of the quantity of milk given by five of the cows on Gov. Boutwell's estate, during the year 1866, is interesting. The cows are none of them of large size, and probably all of them gave more than seven times their live weight of milk in the year. I think the quantity will prove to be very large, and I hope your correspondents may furnish the means of forming a correct judgment on the subject. The average amount of milk in the year given by a herd of five cows, kept up by exchanging them when their milk fails, is quite a different matter from the average of five cows kept during the whole time.

The Governor's statements are as follows:

In the winter of 1861 I fed 25 cattle, 2 oxen, 1 bull, 16 cows, 5 heifers two years old, 1

heifer one year old. The daily food was as follows:

Milk Dairy Statistics.

132 lbs. husks and straw at $8 per ton	$0 53
44 lbs. oats, (cut in milk,) at $13 per ton	29
1 bushel shorts	27
1 bushel corn and cob meal	50
½ bushel oat meal	27
130 lbs. dry hay at $16	1 04
3 bushels mangolds, 15 cts	45
	$3.35

Hay and straw cut and mixed—boiling water used. Feed to stand 10 or 12 hours before feeding.

In the winter of 1862 I fed 27 cattle, to wit: 20 cows, 1 two year old, 1 three year old bull, and 5 calves. Daily food.

240 lbs. oats cut in milk, and hay.
18 lbs. shorts.
40 lbs. corn and cob meal.
100 lbs. dry hay.

Mixed thoroughly, wet with boiling water, and allowed to stand about 10 or 12 hours before feeding.

Value in 1862 *at Barn.*

340 lbs. hay and oats, at $12 per ton	$2 04
18 lbs. shorts	18
40 lbs. corn and cob meal	48
	$2.70

In 1861 and 1862 my cattle were in fair condition, equal to that of farmers' cattle generally. At present, however, I feed better—say to the amount of 20 per cent. This, added to the cost in 1862, would make $3.24. Estimating the stock as equal to 24 cows, the cost would be about 13½ cents each per day. Adding 20 per cent. to the quantity, and estimating the value of the provender at present prices, the account will stand thus:

418 lbs. hay and oats at $20	$4 18
22 lbs. shorts at 1½ cents	33
48 lbs. corn and cob meal, at 1¾ cents	84
	$5.35
To which should be added 4 bush. roots at 20c.,	80
24 cows	$6.15
Each cow	25

In these estimates no account is made of labor or fuel required in the business of feeding in the manner set forth. The manure is the only return that a farmer can expect to get.

The annual cost of keeping a cow is then—in winter, 183 days, at 25 cents	$45 75
In summer, 182 days, at 10 cents	18 20
	$63.95

In 1861 I kept 14 cows through the year, and they yielded an average of 4002 pounds of milk. Half of the animals were between two and four years of age.

The amount of milk is not large, but it is equal to the quantity obtained by farmers generally, especially in the country, where the business of feeding is not well understood.

Upon the basis of the quantity of milk obtained in 1862, and the cost of feeding in 1867, every hundred pounds of milk would now cost $1.60, or about 3 1-5 cents per quart. It did not, in fact, cost but about half that sum in 1862.

In 1866 I milked 15 cows through the year, 6 of them being less than four years of age. The 15 cows and heifers yielded 74,140 pounds of milk, being an average of 4942 pounds. Upon the basis of the cost of feeding at the present time, (Sept., 1867) each hundred pounds of milk cost $1.29, or 2 3-5 cents per quart, wine measure.

Quantity of Milk from Jan. 1, 1866, *to Jan.* 1, 1867.

Name.	Age.	Breed.	Quantity in lbs.
Diana,	7 years,	½ Hereford, ½ Native,	7357
Nellie,	7 years,	Ayrshire,	6300
Fannie,	7 years,	½ Ayrshire, ½ Native,	6175
Topsy	8 years,	¾ Ayrshire, ¼ Native,	5985
Mattie,	10 years,	Ayrshire,	5425
			31,242
Pounds per cow			6248

Each cow had a calf during the year. Feed during the summer, pasture only. In winter, hay, straw and corn-fodder cut, with corn and cob meal added, and all cooked by steam. Also a small quantity of roots.

If other correspondents would furnish statements as accurate as these, valuable results as to the profits of stock-growing and dairying might be attained. Henry F. French.

Concord, Mass., Aug. 29, 1867.

EXTRACTS AND REPLIES.

TO PREPARE STRAWBERRY PLANTS FOR TRANSPORTATION.

A friend of mine, now in Oregon, wants me to send him a thousand strawberry plants. They will go by Wells, Fargo & Co.'s Express, and by water, and will be about thirty days on the way. Now I would like information in regard to the best way of preparing them for their journey. I suppose the best time for taking them up will be in March, when the vital forces of the plant are all inactive, and just as soon as the ground has thawed sufficiently. Also, that the large, outside leaves should be removed, leaving, perhaps, the small growth from the centre of the root. These *outside leaves* would take up considerable room, on which express must be paid to get to San Francisco, at the rate of $1.80 per cubic foot, in gold. Then, how should they be packed, loosely or closely? Should they be packed in damp, or wet moss, and should they be in a very tight, or in a ventilated box? Whoever will give the necessary information, and correct whatever wrong ideas I may have expressed, will receive my most sincere thanks.

Franklin, Mass., Oct. 7, 1867. F.

Remarks.—In reply to the foregoing inquiries, we are very happy in being able to present the following suggestions from a gentleman of greater experience, probably, as a florist, seedsman, and nurseryman, than any other individual in the State. There is considerable inquiry among farmers and others as to the means of obtaining and methods of cultivating strawberries, and a great many of our readers will join with "F." in thanks to Mr. Breck for his prompt and full reply.

—

Strawberry plants are the most difficult of almost any other to transport with safety when they are kept out of ground a long time, especially when

they are on a sea voyage of thirty days, part of the time in a tropical climate. To pack them in wet moss would be their destruction in half that length of time on ship board.

I have found that the best way to preserve them on a voyage of any length is to take up good sound, young and well established runners, the last of April; divest them of all decayed leaves, tie them in bunches of 25 or 50, having their crowns disposed evenly, and then dip the roots in a clay puddle, working it into all the roots; let these bunches get dry or nearly so; then pack them tight in a box with the crowns upward, and let the top be covered with slats to let in the air, and I think they will go safe. Yours &c., Jos. Breck.

EARLY LOSS OF THE HAIR.

Will you or some of your readers give me a receipt, through the Farmer, to prevent hair from falling out and to promote its growth. I am a young man and my hair has been falling off for a year, and now it is very thin. I have tried all the hair oils and received no benefit; and now, as a last resort, I apply to the Farmer for help, as I always do when needed. Albert.

Remarks.—If the cause be *hereditary*, no medicament will cure. In some families the hair falls off in early life, for which no possible cause can be assigned. In other families the teeth decay long before manhood arrives. If not hereditary, and the skin requires a little quickening, perhaps the best applications are a wash of glycerine and water, or a weak solution of borax in water.

Washing the head occasionally in moderately cold water, and rubbing gently until the hair is dry, would tend to give increased activity to the skin and thereby cause it to hold on to the hair. But it should not be washed as often as to wash away all the natural oily and softening secretions of the skin.

A large proportion of the hair oils, or hair *restorers*, as they are called, are probably injurious to the head and hair, instead of promoting its growth, or retaining it upon the head. And it is possible that your trial of "all the hair oils" has aggravated if not caused the trouble you now seek to remedy.

AUTUMN GARDENING.

This, I have no doubt, looks like a very frosty subject to many of your readers. To prepare ground for next year's occupancy and leave it for the cold storms to beat down to almost brick consistency; to bury little seeds in the earth and leave them for long, weary, cold months exposed to frosts and storms! How can they ever spring to life and health; to bloom and fruit bearing? What is regarded as an accident, sometimes leads to very pleasant and useful results. A tomato ripened in obscurity under the leaves of the parent vine, and when fully ripe it still eluded the search of the gardener. Decay always follows maturity. So it was with the tomato. The rich pulp decayed and fell to comparative nothingness, but the little seed fell upon the yet unchilled earth; the autumnal rains gave it a slight burial; winter's frosts and snows cemented the earth around it; but when the soft rains, and gentle winds, and warm sunshine of spring came, the little seed, so long dormant and cold awoke from its slumbers, and sent up a tiny plant to greet the returning season of flowers and fruit. There, where it sprang up it was allowed to grow. When the cold winds saluted it with rough, chilling breath, their only influence was to give it strength and power of endurance. It grew on, blossomed and bore fruit.

Near by it was placed a plant taken from the hot bed, where nurturing care had long and faithfully been given it. This plant, too, must be subject to all the influences of out-of-door atmosphere. When the winds shook it, it shrunk from their embrace, and leaned down to earth for its protection. It required artificial aid to give it an upright growth. It also became enfeebled by its removal from the rich soil and hot-house protection, and through this, and kindred disadvantages, it soon fell behind its stronger and more enduring neighbor.

The above is no allegory. We have seen the self-sown tomato spring up from the bed of its winter repose, and have set plants from the hot bed in well prepared soil near by it. At the time of transplanting, the hot-bed plants had the advantage of several inches in growth, but with the same after care, the self-sown plants reached an earlier maturity and gave more abundant harvest. And now, we depend on our autumnal planting for our supply of the tomato.

The ground for this fall sowing should be prepared with all the care in manuring and pulverizing that would naturally be given in spring, and the seed sown where the next year's plants are expected to grow; for, manage the thing as well as may be, the growth of this plant is retarded by transplanting. If some precaution is used to prevent the earth from becoming too compact in winter and spring, it will be all in favor of the plant. We do not claim that seed so sown will come up so early as those sown in the hot-bed, but they will come up as soon as the earth and atmosphere are ready to give them growth, and the plants raised in this way acquire a healthier growth, come earlier into bearing, and produce more abundantly than those raised or started by artificial means. Such is our experience. Lettuce and cabbage may have an early start by the same method. W. B.

Richmond, Mass., Dec. 11, 1866.

Remarks.—This communication was received, as appears by its date, rather too late for its practical suggestions to be adopted by our readers last season. Autumn gardening can now be attended to, and this article is more seasonable than it would have been in the latter part of last December. For various reasons we occasionally postpone the publication of the favors of our friends, but we hope that such delay will never be considered as disrespectful to the writers.

EXPERIMENT WITH NEW POTATOES.

I tried four of the seedling potatoes advertised last spring, and think the result may be interesting to your readers. I planted on poor, wet, greensward. Half a shovelful of green manure and a spoonful of phosphate of lime were put in a hill. A handful of ashes was applied at the second hoeing. The variety, amount of seed used, and the yield were as follows:

Name.	*Seed.*	*Yield*
Harrison,	1 peck	10 bushels.
Early Goodrich,	½ bushels	13 "
Calico,	2½ bushels	57 "
Gleason,	2½ "	80 "

The blast killed the vines of the Calico and Early Goodrich, and consequently the hills were

full of small potatoes. I do not think these worthy of a further trial, as I want a potato to stand the blast.

The vines of the Gleason and the Harrison stood green till they froze down, and both produced good sized tubers. Of the two, I give the preference to the Gleason, as the Harrison was slightly affected by the rot, while the Gleason was perfectly free from any signs of disease, and is a white, handsome, mealy potato.

From a third of an acre of very poor land, planted from three and a half to four feet apart each way, I dug eighty bushels, and had I planted as closely as most farmers do here, and on good land, I have no doubt I should have got one-half more. I recommend farmers to give the Gleason a trial. L. E. Bicknell.

Windsor, Mass., Oct. 16, 1867.

A SPORTING APPLE TREE.

Some eight or ten years ago, I grafted an apple tree, about four or five inches in diameter, containing fifteen branches, with scions taken from a tree standing about twenty feet from it, a part of which had, for more than ten years previously, as it has ever since, borne "Greenings," and the remaining part "Liscombs."

Intending to have the tree under consideration, grafted to "Greenings," only, I carefully selected the scions from that part of the tree which had always borne that variety, and immediately inserted them in 14 of the 15 branches before mentioned, leaving one as a sap-drawer. I will add here, that the natural fruit of this tree is a small white apple, nearly sweet, of about half the size of the Russet herewith sent.

The second year from grafting, one of the branches bore *two* apples of the same kind with the specimen with the oval blossom end; the third year two of the branches bore about half a bushel of the same kind, and several of the others bore Greenings. But it was not, I think, until the sixth year that all the branches bore together, when four of them bore the same kind as the first two apples above mentioned, and all the rest Greenings. Subsequently, I have noticed no difference in the division of the branches between the different varieties, until this year, when nine branches bore apples of the kinds indicated by the two larger specimens herewith sent, *one* of the smaller, and *four only* bore Greenings!

And yet I positively assert that all the scions were taken from a tree that has not a branch that has not borne, during more than twenty years, either "Greenings"or "Liscombs."

In conclusion I would say, that I have never noticed any of the kind represented by the specimens—flat on the blossom end, like a Greening, until this year, and therefore cannot state its quality—but the other has a delicious taste and flavor, seeming to combine the excellencies of the Greening, Liscomb and Baldwin. Edwin E. Blake.

Wrentham, Mass., Sept. 21, 1867.

Remarks.—The statements of our correspondent are both interesting and strange, and did they not come from one who seems to have given the matter the most careful attention, we should be inclined to think that some mistake was made in selecting the scions.

We call these strange changes,—which seem to us to be a departure from the regular order of things,—*freaks*, or *sports* of nature, when the probability is that they are the result of the operation of exact laws, but laws which are as yet hidden from our view.

Trees sometimes blossom twice in the same season. It is only two or three weeks since we saw an account of an apple tree in full bloom in September. Cabbages have club feet; onions, instead of rounding themselves out in comely proportions on the surface of the ground, grow up like a walking stick, and reflect no credit upon their kind. Some cows drop a calf with two heads, six legs, or three tails! And who can tell what the cause is of either of these departures from the common order of things?

The circumstances related are interesting, and we shall be glad to receive the opinions of others in relation to them.

CHEMICAL TERMS.—CARBON.

I have been highly pleased with your series of articles entitled "Chemical Terms," thinking they might be productive of great good by defining and explaining what has been kept locked up away from the masses as profound secrets, in unintelligible terms and names; but while I see much to admire, I would request the writer to be a little more exact in his statements.

In the fourth article, on carbon, he says, "Plumbago, or as it is called, black lead, is crystalized black carbon." If he had written, "crystalized carburet of iron," he would have been nearer the facts. According to Klaproth and Saussure, plumbago, when pure, is a chemical compound of carbon and iron, in the proportions of 96 carbon and 4 iron, though it sometimes contains almost enough silica to constitute it a silicate of iron. Probably it is the iron that gives it its fire-resisting power, as it is well known that steel is more refractory in the fire than pure iron.

Finally, the main points of difference between "R." and myself are these: he cites plumbago as a sample of pure carbon, saying nothing of the iron which is an important constituent of the mineral in question, while I claim it is a chemical compound of carbon and iron. Rusticus.

Ripon, Vt., Oct., 1867.

MR. POTATO FIELD *vs.* MR. GREEN GROCER.

Last spring, because of the exorbitant price that Mr. Green Grocer made me pay for potatoes, I determined that I would patronize him no longer, and hearing Mr. Potato Field was a man well reported of for honesty and fair dealing among his neighbors, I determined that he in future should have my custom. Accordingly one day I called upon him, and after a very interesting visit spent in looking around his premises, we came to the following understanding: Mr. Field was to furnish me with all the potatoes I wished in the fall, and the price thereof was to be as reasonable as he could afford, while I in turn was to work for him for fair pay, and render him any assistance he might require in his business.

The first of our transactions was as follows: I rented to Mr. Field a piece of land, making him pay a fair price for the same. I also made him pay a good price for the manure put upon it, and for repairing the fence around it. I then sold him some potatoes for seed, charging him the same price that Mr. Green Grocer asked for them. Then, as I had leisure time, I worked for him, ploughing, planting, hoeing, &c., for which I charged him $1.50 per day. And, by the way, he is a very nice man to work for; fully agreeing with me in politics, and on all other important subjects; so I came to the conclusion that he was a very sensible man.

Well, the summer months have passed and gone,

and the time has arrived at which Mr. Field was to perform his part of the contract, and to-day he has finished putting the potatoes into my cellar, and this evening we have been looking over our books. I find he has charged me only 23 cents per bushel for potatoes. Now as 23 cents per bushel is only about one-third as much as Mr. Green Grocer asks for them, I have come to the conclusion that Mr. Potato Field is the best man to deal with. And, furthermore, Mr. Galen Speculator stands ready to give me a good price for the potatoes, as he wishes to send them down for the good people of the "Hub" to eat. So you see I might make a few dollars for pocket money.

I have found Mr. Field honest and upright in all dealings. In fact, I have such confidence in his honesty, that I should not hesitate to trust him in any business transactions, never fearing but that the side of my loss and gain account would show a larger balance because of my dealings with him.

Washington County, Vt., Oct. 1867. C.

Remarks.—Rev. H. W. Beecher is reported to have said that it may be true that clothes do not make a man, still after a man is made he thought he looked all the better for being dressed up. This is as true of facts as of men. Even dry statistics may be presented in an attractive garb; and most capitally has our correspondent succeeded in giving life and beauty to the dry bones of his potato raising experiment.

OLD PLASTER, LIME, &C.

I am repairing my house, and among the *debris* are several loads of old plaster, mortar, &c. It is said to be a valuable fertilizer. But I am ignorant of the proper method of its application. How can it be disintegrated for such a purpose? Is there any way by which it can be profitably composted with other ingredients? S. H.

Attleboro', Mass., Oct. 7, 1867.

Remarks.—Such materials are valuable, as they contain many excellent fertilizing properties. On fair land, we should prefer a dressing of them to one of good stable manure, for a crop of wheat. Still, we know of several heaps of such stuff, which have been lying by the road side, on the farm, for several years. It is certainly time that the common farmer should give more attention to things of this nature. Our correspondent is a professional man, but the moment a farm comes into his possession, his inquiries commence as to the value of things about him. And this is the only way to proceed in order to make the labor applied become profitable.

The plaster of an old house contains many valuable agents, besides mere lime, such as salts of various kinds, soot, &c. In China, the plaster of an old kitchen is so much esteemed as a manure, that a farmer will be at the expense of replastering an old cook house for the old plaster, that he may employ what he takes off to fertilize his fields.

In one of Prof. James F. W. Johnston's lectures, delivered before the Durham County Agricultural Society, in England, some twenty years ago, he says lime acts upon soils in two ways. It produces a *mechanical* alteration, which is simple and easily understood; it is also the cause of a series of *chemical* changes, which are really obscure, and are as yet susceptible of only partial explanation.

In the finely divided state of quick lime, of slaked lime, or of soft and crumbling chalk, it stiffens very loose soils, and opens the stiffer clays, while in the form of limestone, gravel or shell-sand, it may be employed either for opening a clay soil or for giving body and firmness to boggy land.

The purposes served by lime as a chemical constituent of the soil, are at least of four distinct kinds.

1. It supplies a kind of inorganic food which appears to be necessary to the healthy growth of all our cultivated plants.

2. It neutralizes acid substances which are naturally formed in the soil, and decomposes or renders harmless other noxious compounds which are not unfrequently within reach of the roots of plants.

3. It changes the inert vegetable matter in the soil, so as gradually to render it useful to vegetation.

4. It causes, facilitates or enables other useful compounds, both organic and inorganic, to be produced in the soil—or so promotes the decomposition of existing compounds as to prepare them more speedily for entering into the circulation of plants.

All these theories are susceptible of quite satisfactory illustrations or explanations, for which we refer our intelligent correspondent to Davy's Agricultural Chemistry, Liebig's Natural Laws of Husbandry, to the Lectures from which we have quoted, or to Prof. Norton's Elements of Scientific Chemistry. They will each pay well for a careful perusal, and will interest and please while they instruct.

THE TOMATO.

I have frequently been asked the question: How long has the tomato been in use in this part of the country? I have also been informed that the subject has been discussed in some of the papers within a short time. I therefore propose to give my own experience in the matter.

The late Chief Justice Wm. M. Richardson of Chester, N. H., was a member of the Congress that declared the war of 1812, and when he came home from Washington he brought with him the seed of the tomato, the martynia and rhubarb, to his father, who was our nearest neighbor. He raised them one year, and the next I procured the seed and roots and they have all been in our garden ever since. They were all raised as curiosities, not knowing that they were of any use at all for several years.

In the year 1823 I was at school at the Greenleaf Academy, Bradford, Mass., and Mr. Kimball, the man with whom I boarded, worked in Haverhill, and occasionally brought home a handful of tomatoes and used them sliced in vinegar, the same as cucumbers. This was the first time I ever saw them used, and here I first learned to eat them. Mr. Kimball called them *Tremarders*.

In the year 1829, I raised several bushels in the town of Arlington, on the farm now owned by Albert Winn, Esq., and sold them in a green state for pickles. I next raised them on the Longwood farm in Brookline, for the Hon. David Sears; he having learned to use them in France.

In the year 1833, I undertook to raise 30 bushels for a Mr. Thomas Lewis, in Broad Street, Boston;

but the seed was planted in the field like corn, and but few of them ripened. A few bushels, however, ripened, and were carried to market by Charles Stearns, Esq., of Brookline, and this was the first that I heard of their being carried to Boston by the bushel. From that time they came into use very rapidly.

P. S. Judge Richardson went to Congress from Groton, Mass. B. F. Cutter.

Pelham, N. H., Oct. 25, 1867.

Remarks.—We are pleased to see once more the name of our old friend and correspondent in the columns of the Farmer. The history of the introduction and popularity of the tomato is interesting, as an illustration of the influence of habit and fashion on the taste and opinions of men. Mr. Buist says that in 1828 it was almost detested; in ten years more it was so popular that every pill and panacea was "extract of tomato." Mr. Fearing Burr, in his excellent work, *The Vegetables of America*, notices the fact that its scientific name, *lycopersicum*, derived from *lykos* wolf, and *persicon*, a peach, referring to the beautiful but deceptive appearance of the fruit, more than intimates the kind of estimation in which it was held. The *American Encyclopedia* says the tomato is supposed to have originated in South America, and to have been early cultivated in Mexico and Peru. Several varieties were known in England and Germany in 1597, and Parkinson, in 1656, speaks of them as garden curiosities under the names of love apples, amorous apples and golden apples.

VARIETIES, CULTURE, AND USE OF THE QUINCE.

Will you, or correspondents, give practical information about quinces? I find little in fruit books.

1. What is the best kind? Are they best raised from seed, cuttings, or plants, and how long will it take to bring them into bearing?

2. If raised on a large scale, would they be always sure of a profitable market, and how long will they keep?

3. If for lack of market, they were likely to decay, could they be dried, or preserved in any other way, so as to be salable, to any extent?

Lastly. Do nurserymen generally keep them? Have they any enemy but the borer? and how far apart should they be set?

Answers, and general information on the above subject, will greatly interest and oblige a reader of your most valuable paper. S. B. Keach.

Providence, R. I., 1867.

Remarks.—1. The best quince, all things considered, is what is called the Apple-shaped Quince. We have them now on the bushes, large roundish fruit, which stew tender and are of delicious flavor. It is said that there are several varieties of the apple-shaped quince, but we are inclined to think that the variations in this popular variety are owing to soil and culture. The quince requires a deep, rich soil in order to produce large and fair crops. On poor soils they are knotty. They may be raised from seed, cuttings or roots; but the best way is from cuttings. Set them early in the spring in a shady place, and in good soil.

2. The demand for the quince in all this region is now quite limited. Twenty years ago, or more, before pears were so abundant as they now are, large quantities of the quince were produced and found a ready sale in most markets. It was then the principal fruit preserved, and was considered the most delicious of any. They will not keep sound long.

3. Quinces may be dried, but we do not think the operation would be a profitable one.

4. Quince plants may usually be found at the nurseries. The bushes may be set as near as ten feet to each other, and are hardy and easily preserved in bearing.

SUCCESSFUL BEE FEEDING.

Last season I had three swarms of bees. In November two of them died, leaving no honey in either hive. On examination, I found the third swarm alive, but their honey was nearly gone. Being anxious to preserve my stock, I determined upon an experiment in feeding. I obtained twenty-three pounds of Southern honey for this purpose, costing 17 cents per pound. My hive was of the Langstroth pattern. In place of the surplus box, I put a box containing a part of the Southern honey. As the bees emptied the box it was refilled, until in three days they had disposed of the twenty-three pounds. The swarm wintered well, and from the 15th to the 30th of last June the bees swarmed three times. During the summer and autumn, I took from the old swarm two boxes of honey weighing eighteen pounds, and from the first new swarm, six boxes of honey, weighing fifty-eight pounds. The four hives are large and are now filled with comb and honey, —fifty pounds or more in each hive,—making in all two hundred and seventy-six pounds of comb and honey. Last season, one of the most disastrous to the bee keeper of any I have ever known, my neighbors' bees all died,—one of them losing twenty-two swarms. Forty-four swarms died in our neighborhood last autumn and winter, most or all of which, in my opinion, might have been saved by feeding. Luke Waite.

Hubbardston, Mass., Oct. 16, 1867.

A GREAT COW FOR MILK.

I see by your paper of July 27, that Mr. I. H. Capron, of Smithfield, has a two-year-old heifer that gave fifteen quarts of milk per day. I have one that came in seventeen days before she was two years old, and when her calf was five weeks old it dressed 137 lbs., and its mother gave for four weeks not less than fifteen quarts, and sometimes more per day. And at this date, after giving milk twenty-eight months, without missing one day, she gives five quarts, and has not given less than that quantity during the whole period, though she has had one calf in the time. I have her now and she comes in February 5th. W. A. Sylvester.

South Wrentham, Mass., Oct. 12, 1867.

Remarks.—As much is said of late about the comparative value of different breeds, we regret that Mr. Sylvester does not state to which breed his heifer belongs.

PLOUGHING ORCHARDS.

I wish to inquire through the Farmer what the effect is of ploughing orchards? I will give my experience and observation, and would like to have yours.

Six years ago I ploughed my orchard, being very careful not to disturb the roots; but found, on examination, that there were a great many cut off; planted it two years, seeding down the third. The

effect was, that it started at first and seemed to look thrifty, and commenced bearing; but since that it has been going back,—limbs dying all over the trees, and some trees dying outright. Now the question is, in my mind, whether the ploughing, and the breaking of so many roots, caused my orchard to decay. One of my neighbors has kept his orchard ploughed seven or eight years, but has not taken any crops from it. He ploughs it several times during the season, and the consequence is, in my opinion, that he is spoiling his orchard, if it is not already spoiled. A. L. W.

Hope, Me., Sept. 30, 1867.

Remarks.—Shallow and careful ploughing of an orchard is usually beneficial. Breaking a few of the small roots that run near the surface is not considered injurious. The breaking up of the sward is supposed to be quite useful to an orchard that has been several years in grass.

We think the decline of your orchard must be imputed to some other cause than that of ploughing. You ploughed yours, you remark, six years ago; since that time nearly all the orchards of New England have failed to yield a crop. As a general thing, however, the trees have not died.

RATS IN THE CELLAR.

What is the best remedy to drive that enormous pest, the rat, from one's cellar? I have tried trapping and poisoning, and do not succeed in either. If you, or any of your numerous readers, can tell it will do a reader of your paper a great kindness.

Middlebury, Vt., Oct. 11, 1867. E. M. E.

Remarks.—There is nothing equal to a *good* cat, but she must not be handled by children, or any other person; must be fed rather sparingly at regular times, and as much as possible on fresh meat, and usually by the same person. She will soon become accustomed to such circumstances, will answer the call of this person, who can change her about to different parts of the house,—as a night in the attic, a night in the cellar, and so on. When treated in this way she will be rather shy and wild, but will soon become a terror to rats.

BEAN STRAW.

We should like to know whether bean straw is saved and used for cattle to any extent. Cattle food is now so high it would seem as if its kinds should be increased. We know that formerly bean straw was always wasted as worthless. If of value for cattle, and if it is now generally wasted, what a wicked waste it is! The following table compiled from the United States Agricultural Reports shows by analyses the relative value of this straw and corn fodder and grasses:—

	Corn Fodder.	*Grasses.*	*Bean Straw.*
Flesh forming, ...	8.200	10.34	18.38
Heat and fat producing,	35.273	43.80	33.86
Woody fibre, ...	50.251	37.18	25.84
Mineral matters, ...	——	8.68	9.45
Water, ...	6.276	——	14.47
	100.000	100.000	100.00

Prof. Horsfall of England, after experience, speaks of bean straw thus:—"Bean straw uncooked is dry and unpalatable; by the process of steaming it becomes soft and pulpy, emits an agreeable odor, and imparts flavor and relish to the mess. In albuminous matter, which is especially valuable for milch cows, it has nearly double the proportion contained in meadow hay." If every land holder in the State could save for his cows the bean straw of his garden only, instead of letting it dry up and go to waste, the aggregate saving would be considerable. Inquirer.

October, 1867.

Remarks.—When bean plants are pulled just as some of the leaves begin to turn yellow,—the best time, by the way, for the bean itself,—and are carefully dried and kept free from dirt, cattle relish them highly, and sheep will leave almost any other fodder to feed upon them. If left standing until the haulm is dry and black, then pulled and cast upon the ground, to remain several days, they become nearly worthless, losing their peculiar flavor and nutriment.

BRUSSELS SPROUTS.

Has any body had any experience in this delicious vegetable in this country? Every body who has travelled abroad speaks of it with rapture, but we never see it in our markets and hear nothing of it except that the seeds are annually offered for sale in our seed stores. We planted some this year and have several fine large healthy plants, but the promised "little heads" on the stalks, the eatable part, seem to be forming so slowly and sparsely that we do not expect more than one good dish for all our trouble. Can the leaves be eaten? If not, can the small heads on the stalk be produced in this climate in sufficient quantity to be worth cultivating? With me the leaves above the small heads are abundant and vigorous enough. Inquirer.

October, 1867.

Remarks.—We have never raised the Brussel Sprouts, and know nothing of their merits. Mr. Henderson, in his valuable book, *Gardening for Profit*, says this vegetable has never come into general use in this country, probably owing to its being too tender to stand the winters of the Northern States. Even in England, where it is very extensively grown, it is not much raised for market, being mainly cultivated for private use.

CHEMICAL TERMS.

Your correspondent from Ripon, Vt., criticises my definition of Plumbago, and thinks I should have written it "Crystallized Carburet of Iron." Stockhardt,—see Camb. Edition, 1852, page 96,—calls it "Crystallized Black Carbon." On the 97th page he says, "Carbon shows very clearly how one and the same body can have quite different forms and properties. In charcoal, soot, coke and animal carbon it is black, without any determinate shape, and very combustible. In Graphite, (Plumbago) it is black with a crystallized foliated structure, and is nearly incombustible. In the diamond it is colorless, and is crystallized as a four-sided double pyramid, and is likewise nearly incombustible.

In Ure's Dictionary, see Art. Graphite, we read: "It consists of carbon in a peculiar state of aggregation, with an extremely minute and *apparently accidental impregnation* of iron. Burns with great difficulty." I was aware that iron and silex are usually found in plumbago, but I think it may be doubted whether the iron is chemically combined with the carbon, and is not rather a hydrated sesquioxide of iron mixed with it.

De Saussure was an eminent chemist, and did much to promote science in his day. But he wrote ninety years ago, and several of his statements re-

quire verification. However I thank your correspondent for his caution respecting exactness of statement, but especially for the kind spirit he manifests, and the gentlemanly language he uses. Criticism when not unsound and captious, tends to promote care and accuracy. R.

Concord, October, 1867.

RAPHANUS CAUDATUS, OR LONG-TAILED RADISH.

What has been the progress as to this new plant this year? The seeds were sold in the spring for fifty cents each. Not being disposed to go in extensively, at that price, we bought only two. They came up well, but soon after the leaves were formed they were attacked by a small black bug, by which it seemed as if they would be destroyed at once. We attacked the bugs by hand and soon exterminated them. A neighbor who had two plants did not discover the cause of the injury to his plants till they were eaten past recovery. He lost them. Our plants were after this very healthy and hardy, and came to perfection. The seed pods, which alone are eaten when young, are very delicate and of a fine flavor, resembling the radish. Their value is said to be for boiling, but we used none in this way, preferring to preserve the seed, that we might have an abundance of plants for another year. From the hardy and prolific nature of this new esculent, we shall not be disappointed if it goes into as general use and becomes as popular as the tomato, and yet it may be valueless. We have quite a package of seeds from our two plants, and shall experiment with them another year. INQUIRER.

October, 1867.

A SICK SHEEP.

I have a valuable Merino ram, four years old, that for some cause unknown to me, refuses all kinds of grain and roots and almost every variety of feed except what he can gather from the earth. He looks dull about the eyes—gnaws the edge of boards as if seeking for something contained in the wood. He appears to be failing. He has had good grazing the past summer. Is there any remedy? GEO. S. FRENCH.

Wilmot Flat, N. H., Oct 20th, 1867.

REMARKS.—From the above statement it is evident you have a sick sheep; but we are not able to determine the character of the disease. Will some of the experienced sheep keepers among the readers of the FARMER oblige Mr. French by a speedy reply?

APPRAISING STOCK.

Old Farmer B. was on a sick bed when the assessors of his town came around to take his invoice. He said "my cattle are in the barn; they're a poor lot of 'em; they ain't worth much; you can go and look at 'em." The assessors repaired to the barn, appraised the stock and reported to Farmer B. in his sick room. The old man was much displeased that they "set 'em so high," and declared they "wan't worth anywhere near it." "Well, Mr B.," said the chairman of the Board, "I will take every creature at our appraisal." "Shan't have 'em," said the old man with a great deal of emphasis; "shan't have 'em—I won't have you cheated so—I won't." O. P.

October, 1867.

PLOUGHING IN MANURE.

In my communication on preparing ground for spring wheat, in a late number of the FARMER, the expression "harrowing in wheat is a fatal error," should have read, harrowing in manure is a fatal error, because being so nigh the surface it dries and evaporates quickly. It should be ploughed in. The connection shows it to have been a misprint, but one that may possibly mislead the reader. H. POOR.

Long Island, N. Y., Oct. 17, 1867.

A HORSE WITH A SORE EAR.

I have a horse that has a little sore on the edge of one of his ears. It discharges about once a week, about three or four drops at a time of matter as clear as water, but a little thicker. There is no swelling, and it does not appear to be tender. The sore has been there over a year and grows no worse. Can you or any of your subscribers inform me what it is, and what will cure it, and oblige a subscriber. K. P. A.

Strickland's Ferry, Me., Oct. 1867.

REMARKS.—Will some of our horsemen reply to the above inquiries?

FATTENING OF ANIMALS.

The season of the year is at hand when the farmer usually fattens his animals to send to market, or to supply his own table through the winter months.

And *now* is the important time,—first, because the ingathering of the late harvests usually brings together a mass of materials, such as small potatoes, apples, squashes, pumpkins and unsound corn, which, mingled, and cooked, form the best feed that can be produced for fattening purposes. If to this mass, oat or barley meal is added, healthy animals will be found to fatten upon it rapidly.

Secondly, it is the proper time, because the weather is only moderately cold, and it will require less food to make a certain amount of flesh, than it will when it is sharp, cold weather. As fatting animals get but little exercise, they must be protected from wind and cold, and provided with a comfortable place to stand and lie down in.

Having suitable articles of food, improving the right time, and furnishing the stock with suitable accommodations, the next care should be to provide the animals with a *variety* of food. Some experienced stall-feeders assume "that whenever animals are fed on one kind of vegetables only, there is a waste of one or another of the necessary elements of animal food, and that a great lesson on this subject taught us by nature is, that by a judicious admixture, not only is food economized, but the labor imposed upon the digestive organs is also materially diminished."

It has been found by experiment, that food which, when given alone, does not fatten, acquires that property in a high degree when

mixed with some fatty substance, and that those which are the richest in the muscle-forming ingredients produce a comparatively small effect, unless they contain also, or are mixed with, a considerable proportion of fatty matter.

The strict observation of a few general rules, in fattening animals, will ensure profit in the process.

1. Food should be so prepared that its nutritious properties may be all made available to the use of the animal; and not only so, but appropriated with the least possible expenditure of muscular energy. The pig that eats raw potatoes or whole corn, when either cooked could be eaten in one quarter of the time, may indeed fatten, but much less rapidly than if it were given in a proper manner. All food should be given in such a state to fattening animals, that as little time as possible, on the part of the animals, shall be required in eating.

2. We have spoken of the importance of *mixed* food. It will be well, occasionally, to give the animal some *one* article, by itself, of that which goes to make up the mixed food,—that is, a handful of corn, a few raw potatoes, a few carrots or pieces of pumpkins, and if the animal seems to relish them, continue the treatment. But from the time the fattening process continues, as long as the animal is fed, he should never be hungry,—but, at the same time, never be fed so liberally as to leave food standing before him. The animal that is stuffed and starved by turns may have streaked meat, but it will be made too slowly for the pleasure or the profit of the good farmer.

3. One of the most essential p ints in feeding animals is *regularity*. If fed irregularly the animal will consume his food, but will soon acquire a restless disposition be disturbed at every appearance of his feeder, and never in that quiet state so necessary to take on fat.

Horses that are fed regularly will scarcely notice a person coming into the stable between their regular hours of being fed; but if at the usual feeding hour, they paw and whinner, and say as emphatically as their power of speech will allow,—"It is my dinner time, and I want it now!"

4. Allow nothing to take place to distur' them while eating, or indeed, at any other time.

It is said that animals fatten better in the *dark* than in the light; but we protest, with all the feeling we can express, against shutting out any of God's creatures from the blessed sunlight which he has made to fall on all. There is no need of it. All they want is to be quiet. If fed abundantly, and the places which they occupy are comfortable, they will soon subside into a most quiet and thrifty habit. Even the most irritable of them will soon conform themselves to their new circumstances, if the demands of appetite and bodily comfort are all answered. There is no surer proof that an ox or a pig is doing well than to see it eat its meal quickly and then retire to its bed until the hour of feeding returns. It is poor policy, always, to make a pig earn his living by rooting over manure. He requires extra food by such labor, as well as the ox or horse, that works hard.

5. Do not withhold cold water from fatting animals. It is a cruel practice. Let them have as much as they wish and they will fatten all the faster for it.

Fattening Swine

need a dry bed, entirely sheltered from cold winds. Their apartment should be well ventilated, sweet and clean, and if their food is slightly soured they will fatten faster upon it, and their flesh be whiter and more delicate. In

Fattening Sheep

their food should be so prepared as to require as little labor from the animal as possible in eating it.

Soiling and Pasturing.—At a late Fair in Duchess county, N. Y., Horace Greeley said he considered pasture land a nuisance, and he advocated the universal adoption of the soiling system. Wonder what he would do with the results of the experiments, as to the cost of keeping cows, published in the Farmer last week. With good hay at only fifteen dollars per ton, it appeared that the cost of keeping a cow in the barn was about twenty-five cents per day, and in pasture, on land worth $40 per acre, the cost was less than seven and a quarter cents per day, at the State Reform School Farm, Westborough, Mass.; and on Gov. Boutwell's farm, the cost of keeping in the stable was the same as at Westborough, while the pasture feed was estimated at ten cents per day. Circumstances govern cases, is an old adage that some of our enthusiastic

agricultural writers and speakers appear occasionally to forget. The fact that soiling is practicable where land is very high and where milk is worth from eight to twelve cents per quart, does not prove that pasture lands are a nuisance and the universal adoption of the soiling system is advisable everywhere.

For the New England Farmer.

THREE CATTLE SHOWS.

For the following notice of the Fairs of the Stanstead, Can., the Caledonia, and Orleans County, Vt., Societies, we are indebted to our correspondent, "Z. E. J.," of Irasburg, Vt., who visited each of the three exhibitions.

Stanstead, Province of Quebec.

The fair of this society was held at Stanstead Plain, Sept. 17, 18 and 19. I attended the second day, and found over 200 cattle—Short horns, Dutch, and grades, with one Alderney cow and calf; 80 long wooled sheep, over 50 Downs, 15 Merinoes; also a fine show of White Chester and Berkshire swine. In the Floral Hall there was an excellent show of grains, wheat, oats, seed corn, &c., with articles manufactured. One excellent feature of this fair was the exhibition of nearly everything all three days, so that those who went the third day saw the cattle and sheep. No exhibitor was allowed to speak to an awarding committee, who only found numbers attached to the articles. When awards were made the secretary sent a man to tie a card and ribbon upon the meritorious article.

Caledonia County, Vt.

The next week, September 25, I went to St. Johnsbury, Vt., the second day of the Fair at that place. The society have fitted up their grounds and track at great expense. The Floral Hall was very large; but as the objects of greatest interest to me and other farmers, were cattle and sheep, I hastened to the yards, and found only one bull calf and five Merino sheep! the other pens being full of horses hitched for the day. The cattle were on the ground the first day only, to the great disappointment of many farmers from out the county. The Floral Hall was crowded nearly all the time. The show there was excellent. Here the exhibitors' names were on the cards attached to the articles. There was a show of horses upon the track, yet I venture to say the thousands present would have been better satisfied, if the cattle could have been retained. Their early removal will be of more damage to the society than their cost of keeping. To draw a crowd, year after year, there must be a show.

Orleans County, Vt.

This society was organized this year, and it was thought advisable to have only one day's exhibition, October 8, which was held at Barton Landing. There were over 500 entries, and about 3000 people present. Less than $300 were awarded as premiums, from an income of about $700; leaving a good surplus in the treasury for another year. The most prominent exhibitors of blood stock were H. C. Cleveland, Coventry, of Kentucky Short Horns, 14 head; T. Baker, Barton, Short Horns, and Dutch cattle, and Merino sheep; A. A. Randall, Short Horn and grade cattle. There was one Alderney calf, the only representative of the stock,—there being but few specimens in the county. Our drovers say that in Canada they can buy Alderney cows very cheap, from 10 to 20 dollars each. With our dairy farmers the Short Horn grades are preferred, probably because the good qualities of other breeds are not appreciated.

For the New England Farmer.

THE GARDEN IN NOVEMBER.

The careful, thoughtful gardener will find a plenty of work still to do in the garden, while those with little forethought will find little November work, except the gathering of some neglected or late garden crops. There are many things which, attended to now, will contribute largely towards another year's prosperity. Provision for the extended production of the various fruits, large and small, may yet be made by preparing the ground for early spring planting, and extending facilities for hot house, cold frame, and hot-bed. The gardener should not neglect to finish up harvesting any and all crops not yet stored; and as the fall has been a late growing season, some crops will necessarily be left in the ground later than usual; but generally little is gained in letting any crops remain long after frosts have cut down the foliage, or tops. Protection should be provided for the various crops that are to be kept through the winter, either for consumption or spring culture. Stiff soils are improved by being ploughed or thrown into ridges, exposing the greatest surface to the ameliorating and mellowing action of the frosts of winter. Draining may yet be done where needed to obviate the ill effects of a redundancy of water in the soil.

Asparagus.—The old stalks should be cut and cleared off, and a protection of some kind given to the beds; coarse manure, leaves, &c., are good to prevent excessive freezing. New beds may still be made, if required, but it were better to have been done ealier in the season. Deep working and enriching the soil is necessary to the successful culture of this plant, though manure is the secret of large crops of giant asparagus.

Beets—If not already harvested, should be drawn before the ground freezes at all, as frost is injurious to them. Cut the tops and trim them, and store by packing them in sand in the cellar, as heretofore suggested.

CABBAGE.—Gather these and turn them on the head to drain for a few hours, and then put in trenches or in the cellar. I have found them to keep best when put in the cellar, to set the roots in the ground and the heads close together. Have known them put in trenches, head down and the heads covered four or five inches with soil; but they should be buried in well drained, dry soil; when so done, they come out nice in the spring. Harvest before hard freezing weather.

COLD FRAMES.—Look to these and see that they are properly ventilated and aired, that the plants may be sufficiently hardened; protect with mats cold nights; and when freezing weather comes on cover with mats, straw or leaves, to exclude frosts till spring; ventilation is necessary.

COMPOST.—The more the better. For some soils a cord of muck or peat composted with ten to fifteen bushels of hard wood ashes, with half a bushel of refuse salt, will make an excellent fertilizer; now is a good time to prepare it.

CURRANTS.—Provide for an increased production by mulching with manure to be worked into the soil in spring. Gooseberries should be treated similarly. Make cuttings of each, to plant out in spring, if not already provided for, and if an increase is desired; pack them in sand in the bottom of the cellar where they will neither dry up nor keep too moist.

FLOWERS.—Who says, I do not love flowers? Provide for early kinds by planting early blossoming bulbs, if not already done; lift dahlias and other tubers and bulbs that require storing during winter, and store in the cellar.

GRAPE VINES.—This month is the best time for pruning the grape vine; cut back all the last growth except three or four eyes, lay down the vine and give a slight protection of earth or litter. It is better to set new vines in the spring, or rather, such has been my experience.

MICE.—Any rubbish or tall grass left where they will find a harbor will pretty surely be occupied by these little destructives, from which they will emerge to ruin shrubs, trees, &c,; see that they have no such harbor.

PARSNIPS—Are better for remaining in the soil through winter. A few may be dug and put in earth in the cellar for winter use, if desirable.

RHUBARB.—Cover the crowns with a good coat of manure to be dug into the soil around them in spring.

STRAWBERRY BED.—A slight protection to the plants during winter is of advantage in the fruitfulness of the following season; spent tan-bark, straw or forest leaves are good for covering; the limbs of firs, or like evergreens, will answer a good turn.

TURNIPS.—Late ones may safely remain till there is danger of the ground freezing so as to prevent their being pulled. Pull and store in the cellar; packed in sand they keep fresher than if only kept in boxes, barrels or in piles.

WM. H. WHITE.

South Windsor, Conn., Nov., 1867.

For the New England Farmer.

CARBONIC ACID.

As an appendix to what the FARMER has recently furnished its readers in relation to this very common and important gas, I have thought that the following remarks might not be without interest to a portion of your readers.

In an article entitled "How Plants Grow, No. 3," and published in the FARMER of July 20th, 1867, we find the following:—

"Carbonic acid gas is somewhat heavier than common air, and tends to accumulate in the lower strata of the atmosphere, thus we find it in valleys, pits and wells. . . . . And the simple fact that carbonic gas is heavier than atmospheric air, would cause all animal life to cease from the earth, had not some compensation been found. This compensation consists in the withdrawal of this gas from the air by the vessels of growing plants. As we ascend into the atmosphere carbonic acid is less abundant."

While penning the above the writer seems to have forgotten the well known law of the equal diffusion of intermingled gases of different specific gravities. And many readers are, no doubt, surprised to learn that the accumulation of carbonic acid in *some* valleys, pits and wells, is due to the superior specific gravity of the gas, and not to local causes in active operation where the gas abounds. And indeed it is difficult, on the theory of gravity, to account for the facts, that in *some* valleys, pits and wells where there is a scant vegetation, or none at all, the air is in its normal pure condition. If any one should perchance inquire why such eminent explorers and philosophers as Humbolt, De Saussure and Liebig did not discover one of the probable reasons "why plants thrive with less vigor in elevated situations," I answer, they did not know that carbonic acid, by the mere force of gravity, left the upper strata of the atmosphere, and that "as we ascend into the atmosphere, carbonic acid is [proportionally] less abundant;" as will be seen below.

The following statements of some of the most eminent physicists are in striking contrast with our first quoted paragraph:—

"These accumulations (viz., in some valleys, pits and wells,) happily never take place, except when there is some local origin for the carbonic acid; as for example when it is generated by fermentative processes going on at the surface of the ground, or when it issues directly from the earth, as happens at the Grotto del Cane in Italy, and at Pyrmont in Westphalia. There is no real foundation for the opinion that carbonic acid can separate itself from the great mass of the atmosphere and accumulate in a low situation by the mere force of gravity. Such a supposition is contrary to the well known tendency of gasses to diffuse themselves equally through each other. It is also contradicted by observation, for many deep pits contain pure atmospheric air."—*Turner.*

"The experiments of De Saussure have proved

that the upper strata of the air contain more carbonic acid than the lower which are in contact with plants, and that the quantity is greater by night than by day when it undergoes decomposition."—*Liebig.*

"Gases, when mixed together, do not arrange themselves according to their specific gravities, but the particles of each are diffused uniformly throughout the whole space occupied by the fluid. From this principle of gaseous diffusion it necessarily follows, that at all habitable heights above the level of the sea, the air must have a nearly uniform composition."—*Higgins.*

"Carbonic acid increases as we rise from the earth, and is less after a rain which washes it down from the air."—*Youmans.*

I. B. Hartwell.

Wilkinsonville, Oct. 21, 1867.

CARE OF HORSES.

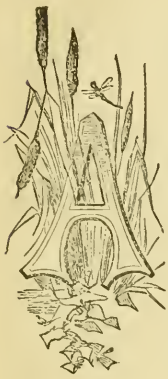
After about twenty-two years' experience as a horse owner, I undertake to set down a little of my experience concerning the management of that noble animal.

Commencing when the foal is a day or two old, I go to it, and pass my hands down its face, along its back, and down its legs to the hoofs, hind and fore, not to mesmerise or charm the animal, but to accustom it to being handled, a thing which cannot be commenced too soon. Foals are animals that, when quite young, have more sagacity, and are more tractable and easily taught than any other animal, so whatever you want them to learn, commence before they are old enough to make resistance, and depend upon it, they will never forget it. Put a halter on it, and lead it about, but be careful not to let it break away from you. Be very kind and gentle to it, but show that you are its master.

I next proceed to the horse's feet. Horses' hoofs are things of the greatest importance; for who would want to follow a lame horse at either work or pleasure. Many things ruin the feet of horses, which I cannot pretend to touch on, but I will try to point out a few errors which any man can see and correct, the greatest of which is leaving their shoes on too long. This hurts the hoof, strains the legs, and causes lameness in every shape. In the winter this has a worse effect than in summer, as then the feet are more dry and clean, whereas in summer they are wet, and the mud and heat of summer will rot the hoofs and cause the shoe to fall off. I have known horses' shoes nailed on in the fall, and not taken off until the next summer, when they would fall off in the pasture, a practice which seldom fails to bring on lameness. A horse's shoe should never be on longer than three months, and two months are very often too long. Horses' hoofs were meant by nature to go bare, and run on the earth in their natural state, and as long as we drive them on such, they need no shoeing; but when we drive them on paved streets, hard roads, &c., we have to shoe them, and stop the wear that nature meant should be on their hoofs. The consequence is that the shoe binds the hoof, and often causes contraction and many other evils, when nailed too far to the heel, left on too long, or when the hoof is not sufficiently pared down between shoeings. See that the shoe is not nailed too far to the heel. Any intelligent man can see when a shoe has been on long enough, and take it off, when it may be left off a day or two, or longer, as the case may be. A drive over soft snow, a few days ploughing or harrowing, or the like, would spread the foot and help to counteract the effects of shoeing. Always see that the hoof is properly pared down before the shoe is again put on. I have often seen the hoofs of old horses greatly improved by being left bare a few weeks in pasture. There are many other things that hurt horses' feet, as too poor feed, too high feed, too hard driving.

The most natural feed for the horse is what he can pick for himself, but as we cannot let him run and pick his own living, let his feed be as near natural as possible. Too high or too low feed have both a bad effect, but as different individuals will form very different notions of what high and low feed are, I will try and point out what I consider the middle course to be. Hay alone, be it ever so good, is not fit feed for horses, whether working or idle. They need grain, with an occasional feed of roots, bran mash, or something to keep their bowels open. Horses need regular feed. The feed I generally find best for horses is about 12 pounds of hay and from 9 no 12 quarts of oats, given in three regular feeds, with a feed of raw potatoes once a week, when idle, or at gentle work; and a small increase when at hard work. The practice of feeding horses all the hay they can eat when idle, has many bad effects; whereas if they get three small feeds, they will stamp about in the stall, and take exercise between feeds, which will keep their legs from swelling, &c. But remember, I do not advocate small feeds of hay without grain. A very cheap way of feeding horses, and not a bad way, is on straw, with a fair allowance of oats. I have tried a great many experiments, and have found horses always do better on straw, than horned cattle. Horses will do better on straw, provided it be good, than they will on hay only, without grain in both cases; but of course they must not be stinted. The main point with the farmer who keeps horses, is to use them in such a way as will give them all the strength and agility the animal is capable of, and to work them all they can stand without injuring either. The poor, half-starved horse is an animal any man ought to be ashamed of; but on the other hand, the pampered and over-fed and half-worked horse, though he may look very nice to some, is an animal I would advise the farmer not to keep, as such animals are more liable to loss than any other.—*J. D., of Nackawick, in Colonial Farmer.*

USES OF OIL IN WOOL.



ALL persons who know anything about wool, admit that it must be oily during its growth in order to be good; and that is merely admitting that Nature, in a perfect understanding of the work which she undertakes, has always placed it there.

It is precisely so with the hair of the horse, ox and cow, and probably is with all animals who have the pleasure of wearing hair which takes root in themselves.

This oil was undoubtedly intended, not *primarily*, as supposed by some, for the health of the animal, but *for the especial benefit of the wool*. If the wool had not needed the presence of the oil, there would have been no oil glands to secrete it; but as the glands are there, and as the wool does need their co-operation, the health of the animal will be impaired if the functions of those glands are suspended.

The oil in wool serves two purposes at least. First, the same that it serves the common hen, the mink and other fur-covered animals that live both in and out of the water—that is, as a *protection against moisture;* and this is a very important consideration, especially to those sheep whose careless owners permit them to remain without shelter through cold North-east storms.

Secondly, the oil is *indispensable* in the production of the best wool. It keeps it soft, pliable, lustrous and strong, with all its beautiful parts, barbed sides, and serrated edges, perfectly developed. It is elastic and pleasant to the touch, instead of being dry and harsh.

There is nothing much easier for many people than to ride a "hobby," and to ride it unmercifully, too; and here is a sample of it. In the *Ohio Farmer* of August 3, there is a considerable portion of an essay put forth by the wool-growers of Coshocton Co., in which the following is the leading expression:—"*Rams for coupling should throw out as much oil as possible, the more the better,*" and among other things it is stated that this oil tends to keep the wool "clean." Both remarks are extravagant, and injurious to the wool-grower, and wool manufacturer, too.

All the oil that is necessary is just what is sufficient for the purposes which we have mentioned above, namely, protection against moisture, and to render the wool soft, pliable, healthy, lustrous and strong; all beyond that is a production which draws upon the physical powers of the sheep, and adds an element which is not only useless in itself, but one which subjects the manufacturer to a heavy cost to *get rid of* before he can work up the wool.

It is only a few days since we were conversing with a manufacturer upon the condition of the business at present, cost of wools, wool-growing, &c., &c. Among other remarks which he made, this was especially remembered: "We purchase no wool of —— if we can possibly avoid it." Why not? "Because the shrinkage is so great on account of oil and dirt that it is more expensive than any other wool in the market. Besides this, there is a cost of five or six per cent. for chemicals to extract these substances before the wool goes to the cards. The oil must all be extracted, or the yarn will not take colors."

This is not the first time we have heard some of our most experienced and intelligent manufacturers say that they never desired to see a pound of wool from one of our finest wool-producing States, and it is entirely owing to the oil and dirt introduced by "riding a hobby." They have bred to oil and dirt until they have turned the attention of customers another way. If those customers are in the West, they, too, in turn, will drive manufacturers to South America, the Cape, or some where else for their supplies.

The merino sheep may be bred to produce this peculiar oil or yolk in a most remarkable degree. We have seen the fleece of a French merino so full of it that when laid upon the table—without any pressure upon it—the oil has run off from the table to the floor! It could be squeezed out by the hand! Such a fleece, or one only half as oily, is in a condition to catch and hold all the dust, chaff and fine seeds that come in contact with it. It creates a mass of filth which injures the wool and sometimes reaches a weight which becomes an intolerable burden for the sheep to bear.

The question is, how much of this oil is ben-

efieial to the wool? Let us reason by analogy. How much is necessary to the human head, to the horse, cow, fowl, or any of God's creatures for whom he has provided it? Not much; hardly more than in an impereeptible degree. More than this is a burden, a waste of vital power, and twice an expense,—first in the purchase, and secondly in getting rid of it.

Since writing the above we have referred to Dr. Randall's *Practical Shepherd*, the best work, probably, ever prepared on the subject of sheep husbandry, and copy as follows:—

Proper Amount and Consistency of Yolk.

I esteem it particularly fortunate for the preservation of the intrinsic value of our merino sheep, and fortunate for the public interest, that it is already incontestibly ascertained that the greatest amount of yolk is not consistent either with the greatest amount of wool, or with the greatest aggregate amount of both yolk and wool The black, miserably "oily," "gummy" sheep, looking as if their wool had been soaked to saturation in half inspissated oil, and then daubed over externally with a coating of tar and lamp-black, never exhibit that maximum of both length and density of wool which, with a proper degree of yolk, produces the greatest aggregate weight. Yolk has been generally thought to be the pabulum of wool, and if so, its excessive secretions, as a separate substance, may diminish its secretions in the form of wool. Be this as it may, the fact I have stated stands without an exception. And animals exhibiting this marked excess of yolk, are invariably feebler in constitution, less easily kept, and especially less capable of withstanding severe cold. Such excessive secretions appear, then, to cause, or else to be the results of an abnormal or defective organization. For these reasons, these comparatively worthless animals, once so eagerly sought, have already gone out of use among the best informed breeders; and where they linger, it is, like antiquated fashions, in regions where the current ideas of the day penetrate slowly!

There should be enough fluid yolk within the wool on the upper surfaces of the body, to cover every fibre like a brilliant, and, in warm weather, like an undried coat of varnish—but not enough to fill the interstices between them, so that the fleece shall appear, as it sometimes does, to be growing up through a bed of oil. And if there is a sufficiency of yolk above, it must be expected that underneath where the fleece is less exposed to evaporation and the washing of rains, and to which part gravitation would naturally determine a fluid substance, a considerably greater quantity of it will be found. But hardened or pasty masses of it within the wool are to be avoided, on all parts of the body. A portion of the fluid yolk will necessarily inspissate or harden on the outer ends of the wool. It is proper that it should sensibly thicken those ends, and clot them together in small masses on the upper parts of the body—forming a coat considerably thicker, firmer and harder to the hand than would the naked wool, and quite rigid when exposed to cold; but it should not cover the wool in rounded knobs, or in thick, firmly adhering patches, bounded by the fleece cracks—sticking to the hand in hot weather like a compound of grease and tar, and in cold having a "board-like" stiffness. Underneath, for the same reasons given in reference to inside yolk, a greater quantity of it must be tolerated. It should stick the masses of wool together in front of the brisket and scrotum, and large rounded knobs of it inside the legs and thighs and on the back side of the scrotum, are considered desirable.

Another "hobby" of sheep raisers is that of "wrinkles"—but we must look at his paces another time.

THE HORSE AT FAIRS.

To justify the prominence that is given to horses in the premium list of agricultural Fairs, the editor of the *Prairie Farmer* copies the following table prepared by the Auditor of the State of Illinois. It shows the value of horses, as compared with other farm stock, &c., to be larger than we supposed it to be:—

The assessed value of neat cattle in the State of Illinois for the year 1867 is	$17,144,597
Do of sheep	3,510,777
Do. of hogs	5,221,552
Do. of manufactured articles	2,240,536
Do. capital stock of banks	2,270,326
	$32,387,783
Do. of horses	32,578,223

While admitting that trials of speed, as at present conducted, are objectionable and demoralizing, the writer believes that exhibitions and tests of horses may be arranged in such a manner as to encourage the improvement of this noble animal and to develop its valuable qualities. For this purpose the whole matter must be taken from the hands of those who, caring nothing for the improvement of stock, own and train horses for the purpose of putting money in their pockets by winning purses or premiums offered, and by successful betting, often secured by the merest tricks, of which the following is given as an illustration:—

A is a breeder; B and C are unscrupulous jockeys. Each enters a horse, A's being the best. The *race* is "mile heats, best 3 in 5." The first heat B's horse keeps A's at the *top of his speed*, while C's runs slowly, and just saves his distance. Second heat, C's horse, nearly fresh, runs at A's and keeps him at the top of his speed throughout the second mile, while B's runs slowly and just saves his distance. A's horse having won two heats at the top of his speed, must now win a third against two horses, neither of which has exerted his powers, but in a single heat; and the history of the turf shows thousands of cases in which the jockeys have thus succeeded in beating a first class animal with others by no means his equal.

The writer would have the managers of our agricultural Fairs and of our Breeders' Associations assume the control of the "speed rings," and so conduct every performance that "honest men may without sacrifice of self-respect, present their animals for competition, and the crowds of old and young who attend the annual Fairs may witness the contest without the consciousness that they are patroniz-

ing the seductions of the gaming table or the immoralities of the degenerate American turf."

We heartily endorse his remark that "unless this can be done on the tracks at our Fairs, they had much better be dispensed with altogether." But we cannot agree with him when he speaks of the English system of racing as a model for this country, and of its adoption here as likely to remedy the objections to this feature of our Fairs. We are surprised by his remark that

"The English system has not the *excitement* which attends that now in vogue among us;" but that "the annual trials of speed have been attended by everybody, from the King or Queen, to the peasant; from the archbishop to the humblest layman; by all conditions and both sexes; and yet we hear nothing of the demoralization of that nation whose chief pastime this is."

To those who have heard nothing of the demoralizing effects of that popular pastime upon the people of England, we commend the following earnest words of Tom Hughes, Esq., recently addressed to the New York *Tribune*:—

"Of all the cankers of our old civilization, there is nothing in this country approaching in unblushing meanness, in rascality holding its head high, to this belauded institution of the British Turf. It is quite true that a very considerable section of our aristocracy is on the turf, but with what result? Shall a man touch pitch and not be defiled? There is not a man of them whose position and character has not been lowered by the connection, while in the majority it ends in bringing down their standard of morality to that of the blacklegs, and delivering over their estates into the grasp of Jew attorneys.

The last notable instance among our *jeunesse doree*, is that of the Duke of Hamilton, who succeeded to a clear £70,000 a year, some three years ago, and who is now a pensioner of his creditors in the ring, while the old palace of the Douglass is at the order and disposition of the celebrated Mr. Padwick. This gentleman at his Derby dinner this year entertained three dukes, two marquises and six earls, and I believe there was only one untitled man at the board. All of these under the thumb, or anxious to cultivate the esteemed favors of this 'giver of all good things.'

Just consider for a moment what our modern system of betting has brought us to. A reliable tip is that which the most scrupulous young gentleman on the turf desires, above all other earthly blessings, before a great race; that is to say, some reliable information which may enable him to overreach his dearest friend or his own brother, if he can induce him to take the odds."

CANKER WORMS.—From imperfectly understood causes, Canker Worms were not as destructive the past season as usual. It is not safe, however, to presume that this pest is passing away. In almost every orchard which was infested by canker worms last year, there were more or less seen the past season, and in some they were nearly as destructive as ever. As the grubs commence their ascent in the fall, usually after the first severe frosts, it is now time to look to the trees, and to commence defensive operations. That orchards can be saved from the ravages of the canker worms has been demonstrated by many instances of success, in the faithful application of tar and other means of protection, that have been published in our columns. The best time to lock the stable is before the horse is stolen.

THE INDIAN SUMMER.

See across the smiling valley,
Where the yellow corn-fields stand
Fruitful with the red man's blessing,
Rise the mountains tall and grand,
With their cloudy purple summit
Gazing far across the land.

Seem they like great chiefs in council,
Stern and thoughtful every one;
Like a big eye, downward peering,
Through the cloud-rifts looks the sun
On the broad vale, fair and shining,
Where the silver rivers run.

There the smoke of many wigwams
Like a soft haze hovers blue;
There beside the lisping river
Safe is moored the birch canoe,
That with light stroke, quick and steady,
Glides the waters through.

Hither comes the dry-voiced-robin,
With the sunset on his breast,
Deepest dye of happy crimson,
Borrowed from the glowing west,
That with flaming color kindles
When the great sun sinks to rest.

Yonder see the forest monarch,
See the oak-tree burning red,
Like a warrior in his war paint,
Lifting high his fearless head,
With his tall crown plumed with feathers,
And his giant arms outspread

See the beech-trees gathering russet
By the shady woodland stream;
Like the young men of our people,
Supple, hard, and strong they seem,
Like my warrior, my true lover,
Beautiful as any dream.

See the maples, bright and golden,
Like the gay queens of our race;
And the young ash, tall and slender,
Bending lightly in its place,
Like a youthful Indian maiden,
Full of beauty and of grace.

Yonder on the sloping hill side,
Misty with the floating seeds,
In the wind like gay plumes nodding,
See the yellow golden reeds;
See the sumach's fiery berries
Shine like strings of golden beads.

Soon will come the sand wind, sobbing
In these leaves of gold and red,
Like the sound of mingled voices
Mourning for a spirit fled,
Voices raised in lamentation
When a mighty chief is dead.

Soon will come the pattering rain-drops,
Slowly falling, chill and damp,
Like the tread of stealthy footsteps,
Like the dull and muffled tramp,
When our warriors, for the war-path,
File from out their silent camp.

COOKING FOOD FOR CATTLE.

The subject of cooking food for stock was discussed at one of the evening meetings held at Buffalo, during the late State Fair of New York. The statements made by some of the speakers in regard to the increased value of steamed food we regard as bordering on the extravagant. Mr. George Moore, of Erie county, said he had fully satisfied himself that the value of food was tripled by cooking. Mr. G. Geddes, of Syracuse, had thoroughly proved years ago that cooking, independently of grinding, at least doubled the value of food. Others considered two bushels of steamed fodder better than three uncooked.

Wm. Birnie, Esq., of Springfield, Mass., whose stock for several years has consisted of about fifty head of thoroughbred Ayrshire cattle, and five horses, has practiced steaming feed for his stock since 1858, and, as he says in a letter to the *Country Gentleman*, "with increasing confidence in its economy." The process and apparatus employed for this purpose, is thus described in this letter:—

My barn is built on a side hill, and is three stories in part, the principal story on which the barn floor is situated being level with the ground on the highest side, and used entirely for the storage of hay, grain, &c. The next story below opens on to the barn-yard, and is used for stabling and a root cellar, being under ground at one end. Under a portion of this story is a manure cellar 50 by 28 feet, and 8 feet deep, which opens on to a still lower yard.

On the stable story is located the steam arrangement. In one corner of the under ground part is the boiler room, about ten feet square, made as near fire-proof as possible. The chimney is built of brick on the outside, against the corner of the barn, and extends about six feet above the roof at that point. The boiler (tubular) is about the capacity of a four horse engine. The vat or chest in which the steaming is done is built of brick and lined with two inch plank, tongued and grooved, is six feet square inside and eight feet deep, and extends from the stable floor to the barn floor above, with a lid the whole size of the top, opening on a level with the floor. There is also a door four feet square on one side, near the bottom, for the purpose of taking out the feed. The vat steam pipe passes directly from the boiler to the vat, and extends around the four sides and across the middle, about six inches above the bottom. It is perforated with small holes, about six inches apart, for the escape of the steam. Conveniently located at one side, above the top of the vat, is a cask which holds about two hundred gallons of water, which is kept full by a pipe connected with an aqueduct.

The fodder is cut by horse-power on the barn floor, and consists usually of about one-half corn-stalks and straw and one-half good hay. It is thrown from the floor into the vat, and thoroughly wet and mixed with a small quantity of meal or bran, according to circumstances, continuing the process until the vat is full, and taking care to tread down well, using as much *water as possible*, to cause the fodder to absorb as much as it will hold.

I usually direct my foreman to start the fire in the boiler before he begins to fill the vat, and by the time it is full the steam begins to pass into it. I never attempt to get up much pressure, but let the steam pass into the vat as fast as it is generated, and like to keep it on three or four hours—the longer the better.

I feed with the steamed mixture morning and evening, and with good dry hay at noon. When feeding time arrives, the door at the lower side of the vat is opened, and a sufficient quantity withdrawn into a box, and the door closed at once; it is then carried to the cattle in a basket, giving to each about a bushel, less or more, according to size and condition. By the time it reaches the cattle it will be quite warm, but not *hot*.

Last winter I steamed but twice a week, finding no unfavorable effect from keeping the feed so long. This was done to save labor and fuel. Three times a week is better.

TACT IN FEEDING STOCK.

As an excuse for the wretched looking objects to be seen on some farms, and as a reason for not obtaining better animals, it is often said, what would be the use of having anything well bred on such land? The best stock in the world would soon be no better. This is partly true, for poor feeding will cause degeneracy in each succeeding generation; but however bad the soil may be, tact would force some forage crops for summer, and roots for winter, to assist the thin herbage for the warm season, and to help the dried-up, old, withered hay through the cold weather.

It is astonishing to see the good effects produced by judicious management of stock of all varieties, each generation becoming superior to its ancestors, if fed and treated in a better way, and if a wise discrimination is brought to bear on the proper mating of the parents; as witness the sheep of the present day, compared with those of forty years back, and see how very much finer the descendants of the Arabian horses are in England, in spite of the pernicious practice of over early training.

It is not altogether the liberality in feeding, that tells on the colts, the calves and the tegs; there is a certain watchfulness and care combined with a nice perception of what is required, which none but an experienced person knows how to exercise to benefit the young ani-

mals from the time they are born, till perfect in their full growth and beauty. It is useless for people who think they know everything, to cavil at this statement, for I assert that there shall be, say 20 colts, 20 calves and 200 tegs, put under one man's supervision, and a like number under another's, each having facilities in every respect, growing what they please, and choosing whoever they like to wait upon them; yet there shall be double or treble a superintendent's salary difference in the value of the two lots when they come to be a year old. Last spring I saw colts and calves which staggered from weakness, and were naught but a frame of bones, when there was everything at hand to have made them fat, if there had been any tact on the premises. It is so in many instances. The animals want a change in their lodging, in food, in air and exercise; require to have some sunshine on them; or there are some simple laws of nature neglected, through ignorance, probably, for the manager may be excellent in his way; he may know how to mend everything on the farm, but the live stock; he may say "come along," to every man who works with him, but not get along the young animals which ought to be in a continual thriving state; in short, be totally deficient in knowledge of the proper treatment of cattle, &c., excepting in cases of "hollow horn" and "tail evil."—*G. G., in Country Gentleman.*

Flavoring of Fruit.—A gardener of Ghent has, after many trials, succeeded, writes *Galignani*, in giving any kind of fruit the flavor he pleases while it is still on the tree. Let us take an apple for instance: he pricks it rather deeply in four or five places with a large needle, and then lets it dip for a while in a bowl containing a liquid possessing the flavor he wishes to communicate. After a few seconds, this liquid will have penetrated into the pulp; and, this operation being repeated two or three times at intervals of eight or ten days, the apple is left to ripen on the tree, and will subsequently be found to have acquired the taste either of strawberry, raspberry, or cloves, according to the liquid employed.

Lampas or Lampus.—W. E. Mintzer, Veternary surgeon, St. Paul, Minn., says this complaint is common to all young horses; but it is cruel and unnecessary to burn or cauterize for it. By passing the finger nail up between the gums and the teeth it may be loosened, which is all that is necessary. But even this is not requisite, except in extreme cases; for if corn in the cob is fed to the animals for a few days, the effort to shell it will cause the gum to be loosened just the same as with the finger. A horse has a strong memory, and once burnt in the mouth he is apt to be chary of your meddling with it in any way, and many ill-halter tricks are often the consequence.

THE WHITE SPRUCE FIR.

Nothing relieves and beautifies the landscape in the winter like evergreens. They protect the buildings and small shrubbery, refresh the eye and give the homestead a snug, social and quiet aspect. Though the ground may be covered with snow, their presence always brings up pleasant memories of summer and green fields, and unconsciously, perhaps, to the beholder, inspires a love of the beautiful. The fir, pine, larch, &c., should have a place about all our farm buildings, and even in the yards of village residences, wherever there is any thing like a liberal surrounding of ground. Their beautiful foliage and magnificent appearance have at all times rendered them objects of attention and admiration.

The White Spruce Fir, here represented, says the *American Cyclopædia*, is one of a large number of coniferous trees of a pyramidial form and elegant proportions. It has rather glaucous leaves, four-cornered and pointed. It is a small tree of inferior timber, but of value for its small, thread-like, tough roots, employed by the Canadians and Indians to sew their birchen canoes, and for its resin,

which they use for pitch. The young saplings, straight, light and durable, are used for poles in horticulture. But it is now recommended rather for its beauty than for the economical value of its timber or roots, and we hope our illustration will be sufficiently attractive to cause many persons to embellish their homesteads with this or other evergreens.

For the New England Farmer.

HARVEST TIME.

Although the summer which has just gone by was colder and wetter in this vicinity than any preceding summer for several years, it was by no means so unfruitful a season as some agricultural writers represent it to have been. Taking all things into account, I believe that the farmers of this section of New England, have but little reason to complain of the results of the season's work; for if some of our crops have fallen below the yield of last year, others have come out in greater abundance than in any previous season for a long time; and as certain articles of produce,—potatoes and onions, for instance,—command a much higher price to-day than they did a twelvemonth ago, it is my opinion that many of us have gained almost as much in one way as we have lost in another.

I think that every New England farmer of long experience will admit that we have had no better season for hay during the last twenty years. As a general thing, the first cut was larger than that of 1866, while the crop of rowen was the heaviest that has been mown for a great while. In fact, I have no recollection of a moister summer than that of the present year. The pasturage continued good throughout the season, so that there was no need to feed our cattle at the barn. Of the corn fodder which I planted in June, with the intention of feeding it to my heifer, in case of an August drought, not a stalk has been eaten, and it is now in the barn-gable, ripe for winter use.

No; if farm produce should be held at famine prices, during the winter now almost at the door, it will be in consequence of the knavery of speculators—not because of a scarcity of food. If the crops of '67 be somewhat deficient, as compared with those of some earlier years, there is yet a sufficiency for all.

At any rate, there is hardly a possibility of starvation on the farm which I occupy. I admit that my potatoes suffered somewhat from the rot, but the loss was not extremely heavy, after all; for from three-quarters of an acre of the Beach lot, I harvested about seventy-seven bushels of Gleasons, which were sold in the market here at the rate of a dollar a bushel—not an unremunerative price. The onions, too, were thinned altogether too freely by the maggot, so that I was able to gather only two hundred and sixty bushels of Silverskins off of one acre of land; but as they brought a dollar and ten cents a bushel in Boston market, I sustained no loss in this case. My cabbages numbered about forty hundred, —all grown in a field containing one-and-a-quarter acres; these I disposed of at an average price of six-and-a-half dollars a hundred, —realizing on this crop alone the sum of two hundred and sixty dollars. Squashes, on my place, came to nothing. I have hardly enough for my own wants. But the yield of hay was enormously heavy, the weight of both cuts being not less, in my opinion, than six and a half tons, the mowing lot measuring two acres and a quarter. My apples were not worth gathering; but a friend of mine informs me that his orchard is rapidly improving, and that, judging from present appearances, it will next season yield a fair supply. For the first time in four years, he has just sent a few bushels to market; and yet, in the fall of '61, that orchard yielded a hundred barrels of excellent fruit.

How deliciously pleasant are these early October days. The skies seem nearer now than at any other season, while earthly objects appear farther away. The bluffs beyond the river have assumed a greater remoteness, and the hilltops that were faintly visible, last evening, on the western horizon, are no longer to be seen. Through the enveloping haze,—a spiritual rather than a material substance,— the maples glow like a subdued, but yet smouldering fire. The briers are red with applethorns; over every pasture wall the barberry bush reaches forth its bunches of crimson berries; and the leaves of the sumachs on the roadside look to have been steeped in blood. Belated honeysuckles are blossoming in the meadow; here and there the low grounds are blue with asters; and under the orchard trees lie heaps of fragrant apples, green, and golden, and russet, and red.

And the sounds that fall upon the ear have no disturbing effect on the prevailing quiet; they but serve to render our enjoyment more complete. Immense bumble-bees,—resplendent in their black and yellow apparel,—are drawing in the flower-cups; squirrels are chattering to each other in the nut-trees; crickets are chirping, far and near. We hear the cawing of crows in the wood on the riverside, and at intervals one of the black-robed conclave gives utterance, once and again, to the cry: "*holly-hawk! holly-hawk!*" and then is still. As we approach the river, the king-fisher quits his perch on the blighted locust, and hurriedly wings his way to the opposite shore,—loudly sounding his alarm-rattle as he flies. Blue-jays are screaming in the covert; wild geese,—the vanguard of a grand army moving rapidly southward in pursuit of the retreating summer,—are honking overhead; and from morning to evening, from the gloaming to the dawn, into the listener's heart pene-

trates the subdued murmurings of the unquiet sea.

It is the Sabbath. The winds are still. From the farm-house chimney the smoke rises slowly and perpendicularly to the sky. The orioles' nests,—long since deserted by their summer occupants,—hang motionless from the drooping branches of the yellowing elms. The surface of the river is unmoved by the slightest ripple, and the overhanging willow on the farther shore is well-nigh as visible in the water beneath as in the air above. There is no rustling of the maize-leaves; all silently the yellow fields await the coming of the gleaner. We breathe the atmosphere of dreamland. The earth is at rest. And as we hear the bells of Salem pealing forth their far-reaching and harmonious summons to the worship of narrowing and discordant creeds, we cannot but pray for the speedy coming of the time when the bells of the *true* City of Peace shall ring glad tidings to all mankind. ESSECKER.

Salem, Mass., Oct., 1867.

For the New England Farmer.

METEOROLOGICAL OBSERVATIONS.

The following meteorological observations for July, August and September were taken for and under the direction of the Smithsonian Institute:—

July.

The average temperature of July was 68°; average midday temperature 75°. The corresponding averages for July, 1866, were 73° and 82°. Warmest day, the 28th, averaging 80°; coldest days the 18th and 19th, averaging 59°. Range of temperature from 53° to 90°.

Average height of mercury in the barometer, 29.20 ins.; average do. for July, 1866, 29.21 ins. Highest daily average, 29.51 ins. Lowest do. 29.01 ins. Range of mercury, from 28.99 ins. to 29.53 ins.

Nine rainy days; amount of rain, 4.70 ins. There were no cloudless days; on three days the sky was entirely overcast. Eleven rainy days, with 4.97 ins. of rain. One cloudless and one totally cloudy day in July, 1866.

The month was singularly propitious to agricultural interests, and at the same time eminently comfortable and healthful. The difference between the average temperature of July 1866 and 1867 is remarkable. The similarity of the rain, rainy days and barometrical averages are worthy of note.

August.

The average temperature of August was 68°; average midday temperature, 77°. The corresponding averages for August, 1866, were 64° and 72°. Warmest day, the 7th, averaging 77°; coldest day, the 31st, averaging 56°. Range of temperature from 42° to 86°.

Average height of mercury in the barometer, 29.23 ins.; average do. for August 1866, 29.16 ins. Highest daily average, 29.40 ins. Lowest do., 28.97 ins. Range of mercury from 28.94 ins. to 29.44 ins.

Fourteen rainy days; amount of rain 5.87 ins. There were three cloudless days; on four days the sky was entirely overcast. Fifteen rainy days with 5.97 ins. of rain. One cloudless, and one totally cloudy day in August, 1866.

While July was cooler this year than last, August has been about enough warmer to make up an average season. The weather, as to rain, &c., was singularly like that of same month last year. The usual cool snap during the last week was experienced, but no frost occurred.

September.

The average temperature of September was 58°; average midday temperature, 67°. The corresponding averages for September, 1866 were 59° and 67°. Warmest day, the 18th, averaging 73°; coldest day, the 30th, averaging 42°. Range of temperature from 33° to 80°.

Average height of mercury in the barometer, 29.32 ins; average do. for September, 1866, 29.26 ins. Highest daily average 29.62 lowest do. 29.02 ins. Range of mercury from 28.96 ins. to 29.65 ins.

Ten rainy days; amount of rain, 2.10 ins. There were five cloudless days; on no day was the sky entirely overcast. Fifteen rainy days with 7.18 ins. of rain. One cloudless, and five totally cloudy days in September, 1866.

While the temperature of the month averaged almost exactly the same as last year, the weather was very different as may be seen by the above comparison. The amount of rain was very small for September with no "equinoctial storm." A fine season for harvesting. A. C.

Claremont, N. H., Oct. 18, 1867.

For the New England Farmer.

DOMESTIC TRAINING.

If there is a need of Agricultural Colleges, where young men shall be taught the theory and practice of successful farming, surely there is an equal, if not greater need of similar institutions where young ladies may be taught the equally important theory and practice of housekeeping.

Without doubt, the best place for domestic training is home; the best teacher a judicious mother. But some mothers are incompetent, and many, from various causes, indisposed to give their daughters thorough instruction in the manifold duties of housekeeping. Some consider it too much trouble. They find it easier to go on and do up the work themselves than to have their girls "round in the way." Others are proud of the lily hands and attenuated waists of their daughters, and to preserve in them those excellent qualities, they are willing to make slaves of themselves. It would

not be easy to compute the misery which results from this neglect. In whatever situation a lady may be placed, ignorance of domestic duties is a fruitful source of annoyance. If she have servants, she is constantly at their mercy,—a servant of servants is she all the days of her life. If she does her own work, it is at the expense of a vast, an unnecessary amount of mental and manual labor. Many a lady loses her health and grows prematurely old, from this cause alone. While the systematic housekeeper will do the work for a large family without hurry or confusion the unskilful one will worry herself into illness over a much lighter task.

We would not be understood as decrying "book learning," or fashionable accomplishments. We believe that there is time enough, if it be properly improved, to learn music, drawing, &c., without encroaching upon the time necessary to acquire a thorough domestic education. MATTIE.

Marlboro', Mass., Oct. 14, 1867.

Remarks.—Our correspondent has said just enough upon this subject to excite the hope that she will authorize us to add to the above brief communication the editorial formula—To be continued.

TOMATOES.

A correspondent of the *Prairie Farmer* details an experiment in growing tomatoes at the Michigan College. The varieties represented were the Eureka, Keyes, Maupay's, Collins, Tilden, College, French Tree, Foard, Lester's Perfected, Large Smooth, Early Red, Early York, Large Yellow, Pear Shaped, Yellow Plum, Cherry, Grape, Feejee, White, Cook's Favorite, Whortleberry, Red Valentia, and Great Chihuahua. They were grown side by side upon the same soil, two hills of a kind, making a row 230 feet in length, and received from the first precisely the same treatment. They were trained to a trellis four feet in height, the branches trimmed so as to cover the whole trellis, and all redundant growth cut off. In this way, during the height of the season, the plants presented the appearance of an uninterrupted wall of mingled foliage and fruit.

In regard to the merits of these different varieties, the fruit of which vary in size from a well grown cherry to those of several pounds in weight, the writer says, a great number can be set down as unworthy of cultivation, unless it be as matters of mere curiosity.

The first five varieties enumerated in the above list are new. Some, which were loudly heralded for their superior merits have proved well nigh worthless, while others whose merits were more modestly set forth, give promise of being valuable acquisitions. Perhaps more was expected from Keyes' Early Prolific than from any of the new varieties; but thus far it has not exhibited a single quality which is not surpassed in some of the other varieties. In point of earliness, its chief recommendation, it stands third on the list; and as regards smoothness, beauty and flavor, its position is so low as to exclude it from a list of varieties worthy of cultivation. The College tomato is a seedling of the Early Red, produced here, and is now in its third year of trial. It is as marked a variety, so far as fruit is concerned, as any on the list. As regards foliage, the most marked of the newer varieties is Keyes'. Estimating their value by their average qualities, the finest, most desirable tomatoes now before the public are the Tilden, Red Valencia, Collins and Foard, and to these four should be added the old fashioned Early Smooth Red, as being the earliest good variety yet produced.

The variety which first produced a ripe fruit is the Early Red, the date being July 29th. The next in order are Early York, Large Smooth, Keyes' and Tilden; these four being of the same date, Aug. 1.

AUTUMN PLOUGHING.

In all heavy clay soils, and heavy clay loams, autumn ploughing is of great advantage. The winter frost is a mechanical pulverizer, and disintegrator of such soils, if we will but put them in the proper condition to be acted upon. Potash is one of the elements of such soils, and with them one of the chief values for the small grain. This mineral is found under two conditions; one fixed, and the other free. The free potash is slowly dissolved in water; it thus unites with sand to form the coating of the straw.

In the other condition mentioned, it is fixed, and in that condition is insoluble in water, and like humus, unfit for the food of plants.

To prepare the fixed potash in the soil, that is, to disintegrate it, we must expose it to air, moisture and heat, hence we must pulverize the soil by the winter frost, to admit of these conditions.

Autumn plowing is supposed to kill many insects; that it does this to some extent is doubtless true; but we apprehend less than it has the credit for. It can be done at a time when the teams are strong, the weather cool, and so much of the spring work is out of the way; while for spring wheat and barley, it is almost indispensable.—*Prairie Farmer.*

Animal Life.—One of the striking facts pertaining to animal life, and one which every tiller of the soil has noticed, whether as a gardener, an orchardist, or more general farmer, is the great multiplicity of animal life seen in one season and an almost extinction the next year. The year 1866 was remarkable for the great numbers of red squirrels in Maine, and other New England States. They abounded everywhere. Every house had its

squirrels and every fence had them as occupants. This year we have not seen one. Last year the caterpillars covered the apple trees with their nests. This year we have seen but a single nest. We have not seen a cut worm the present year on our corn or in our garden. Thus by a wise provision of an all-ruling Providence, these pests which, if allowed to increase from year to year unchecked, would prove the destruction of every plant, like the waves of the sea are bidden.—"Thus far shalt thou go and no farther."—*Maine Farmer.*

THE FARMER'S TIME.

BY C. G. LELAND.

Autumn is the farmer's time;
Ladies fair may love the spring,
Lovers give it welcoming;
Merchants laugh for joy to see
Open roads and rivers free;
Let them live and trade and rhyme—
Autumn is the farmer's time.

Let them in the city's hum
Laugh to see the winter come;
Dancers then are brisk and gay,
Banquets drive the hours away;
Every season hath its prime—
Autumn is the farmer's time.

Summer sends the youth and maid
To the country's cooling shade;
Then we cut the golden grain,
Then we load the creaking wain;
Then we work till rest seems crime—
Autumn is our better time.

Autumn brings us cooler nights,
Autumn brings us fresh delights;
Autumn heaps the richest fruit,
Autumn yields the branch and root;
Sings each season in its prime—
Autumn is the farmer's time.

Durham Stock in Vermont.—A correspondent who has recently visited the Short Horn herd of Dexter Way, Esq., of Landgrove, Bennington County, Vt., thinks the State has reason to be proud of such fine animals as he there saw. A portion of Mr. Way's stock is from the celebrated herd of J. O. Sheldon, Esq , of Geneva, N. Y. His bull, the Earl of Oxford was sired by Mr. Sheldon's Third Lord of Oxford, which is among those recently sent to England, and which we recently noticed as being tied-up in the royal stables of the late Prince Consort. At sixteen months old, Mr. Way's Earl of Oxford weighed fourteen hundred pounds. He has also a fine cow from Mr. Sheldon's herd. He has other pure blood Durhams which are seldom excelled. Among other stock our correspondent noticed a pair of two year-old steers that weighed twenty-six hundred pounds; two pairs of yearlings that weighed about twenty-two hundred pounds per pair; and five calves that he regarded as splendid animals,—the best of their age that he had ever seen. One pair of May calves weighed thirteen hundred pounds.

Lemon Greening.—Mr. S. H. Allen of Shrewsbury, Mass., has left at this office specimens of a very large apple, which he says was brought from England by his ancestors who located in Medfield, Mass., in the early history of the country, and has been propagated to a small extent only by the Allen family, and by those only, so far as he is aware. The tree is hardy and thrifty, and bears every year. As it ripens in April it assumes a rich yellow color, from which it derives its name. Though a fair eating apple when ripe, it is particularly valuable for its superior excellence for cooking purposes. Mr. Allen says it sells in the Worcester market considerably higher than any other late keeping variety. The specimens before us are very large and very hard.

An Industrious Community.—A gentleman of this city informs us that on his farm in the country, a swarm of bees which were hived the fifteenth of June last, laid up 108 pounds of honey and comb in 107 days. With honey at forty cents a pound, we think this daily increase of store very creditable to the new housekeepers.

Large Farms.—As machinery cannot be used to its fullest extent and with the greatest economy on small farms, Mr. J. Harris says in the *American Agriculturist* that in this country we must have larger farms. The tendency is already apparent. We may deplore it, and argue against it, but cannot stop it. He adds: It is certainly far better to have a small farm highly cultivated than to have a large one half tilled. But a large farm *may* be cultivated as highly as a small one—and at less expense per acre. In England, as a rule, the largest farmers are the best farmers. One of the most highly cultivated farms I ever saw contained over 3000 acres, and I do not recollect ever seeing a farm of fifty acres or less, that would at all compare with the more liberally managed large farms. This is very different from what it is here, and one main reason is, a deficiency of working capital.

Farmers' Dress.—A farmer while laboring, is brought into pretty close intimacy with dirt, and his clothes should correspond with his labor. To wear fine cloth and clean linen while at work in the field, would be highly inappropriate; but when he rides into town with

his family, or to market his produce, it would elevate his calling in the estimation of the world, if he were a little more careful of his appearance. No matter how independent we may feel—however we may affect to despise the opinions of others, we are none of us entirely insensible to the fashions of the times or the opinions of the world. Henry Ward Beecher once used the expression—"True; dress does not *make* the man; but when he is made, he looks better dressed up."—*Am. Far.*

AGRICULTURAL ITEMS.

—In fifteen years, sheep have increased in Ireland over 2,000,000.

—To raise good crops is often the best way to raise a mortgage.

—The only way to harvest potatoes successfully is to keep digging.

—Some fields of corn on the Scioto, Ohio, flats have been sold at forty dollars per acre, the purchasers intending to turn hogs into them.

—The crop of flax seed raised in the West this year is supposed to be at least twice as large as that of any previous season.

—Capt. D. Farrington, of Croton, Hudson river, raised this season 150½ bushels winter wheat on 5½ acres. He applied 1¾ tons bone dust, and the grain was sown on 16th October.

—The Boston *Traveller* estimates the cranberry crop on Cape Cod this season at 10,050 barrels which at $10 per barrel will be $100,500 for cranberries alone.

—The death of an agricultural laborer in England is supposed to have been caused by drinking cider from a barrel, between the staves of which white lead was used by the cooper.

—To prevent the rebounding of a wedge from a log you wish to split, make a few checks near together with the ax, and insert the wedge between them, or dash into the crevice from which the wedge has rebounded a little dry sand.

—A. M. Ward, New Britain, Ct., informs the New York Farmer's Club, that if cider as it comes from the press is brought to a gentle *scald*, only, barreled, and bunged tight, it will keep sweet, and the last drawn will be as good as the first.

—In Central Illinois, they who are not farmers complain of hard times. Once, pork was 2 cents a pound, now it is 10; beef was a cent, now it is 12 cents; lard was 5, now it is 15; corn was 10, now it is 60. In Boston, "they who are not farmers" find the same cause of complaint, but instead of inquiring whether a change in the relative numbers of producers and consumers may not have something to do with the result, they content themselves with simply cursing the speculators.

—"Coal tar," reduced one-half, and applied with a brush while slightly warm, makes an excellent substitute for putty on green-house roofs, beside holding the glass firm through all the changing seasons. It is also an excellent preservative of the sash.

—Those animals that are the most natural prey of ferocious beasts possess the ruminating faculty so that they can gather their food in a hurry from exposed localities, stow it away temporarily in a sack provided for the purpose, and retire to a place of safety to masticate it.

—The statement is made in the Kansas *Farmer* that "Capt. Bouton of Rock Creek township, in Nemeha county, has threshed 250 bushels of wheat from 8 acres of ground—upland prairie—sown on sod ground—seed, the White May. He is selling the entire crop for seed at $2 per bushel."

—In Benton Co., Ind., there is a farm of 24,000 acres of land owned by Messrs. Fowler and Earl. They design it to be used entirely in preparing cattle for market. When the whole tract has been brought into proper condition, it is expected 8,000 cattle can be fed on it.

—Five years ago Ohio cheese was the only kind sent to Chicago. Now, Northern Illinois contains more cheese factories than Europe, Asia, and Africa. Some of the best butter reaching New York city this season is from this section and from Wisconsin.

—To clean cider barrels the *Scientific American* says, put lime water and a common trace chain into the barrel through the bung hole, first tieing a strong twine to the chain to draw it out with. Shake the barrel about until the chain wears off the mould or pomace, then rinse well with water.

—In France, Government raises all kinds of improved stock for sale, and prohibits farmers from doing so. No agricultural societies are allowed, for Government does all this business, and there cannot be a meeting of more than 20 persons for any object whatever, without consent of the Government.

—It was recently stated at a meeting of the Madison County, Ill., Farmers' Club, that when the country was new, rails made from old timber cost about 50 cents per 100, and would last from thirty to forty years; those now made from the second growth cost from $5 to $6 per 100, and do not last more than ten years.

—A farmer, more than most men, needs pluck, faith in himself and in nature, and above all patience. He must wait for results, and while doing so it is important that his surroundings should be as pleasant as he can afford to make them. A cheerful healthy location, is of more value than a fine house.

—In a letter from Texas to the *Mirror and Farmer*, Dr. Boynton speaks of the scab as a very prevalent disease among sheep in that State. The usual remedy is immersion in warm tobacco water, the fumes of which often make the men who administer it sick and completely prostrated. "Bless

ed beyond measure," says Dr. B., "are the New England flock masters who have not this enemy to contend with."

—In the annual report of the managers of a horse railroad in New York, it is stated that 279 horses out of 988 died during the year. The average life of a horse in this service is said to be only 3½ years. The average price paid by this company was about $156. For those sold in a broken down condition, it received a trifle over $30 each.

—A gentleman in Geneva, N. Y., informs the *Country Gentleman* that he has kept his currant bushes entirely free of the currant worm, and his quinces of the borer, by the use of coal ashes. The ground under the currant bushes was covered in the spring to the depth of five inches, and a mound was made about the stems of the quinces.

—Mr. S. D. Ingham, Ripley, Ohio, after tormenting his horse to madness with the various prescriptions of horse doctors for the cure of Fistula, resorted to cold water, which was poured from a watering pot upon the sore, and a complete cure was effected in five weeks from two daily applications.

HUSKING.

The yellow suns of autumn fall
Across the orchard and the wood;
The still air echoes every call,
The vine lies painted on the wall.
And all the maples drip with blood.

The neighbors come from far and near,
And gather on the broad barn floor;
To celebrate the ripened year,
And strip the husk from off the ear,
That turns to gold the farmer's store.
—*Riverside Magazine.*

***The following paragraphs were received in connection with a longer article from one of our correspondents. If other farmers would follow his example, our items column might be filled with facts and suggestions fresh, seasonable and instructive. The idea of producing an elaborate dissertation is the grand stumbling-block in the way of writing for a paper. Almost all farmers can *talk* plainly and to the point; but the moment they undertake to *write* they fall into the sermonizing style, and too often, getting stuck in the first sentence, they throw down their pens in despair. We submit the following four communications as models for the study and imitation of all who have been baffled in their attempts at writing for agricultural papers:

—Four dollars a barrel is being paid in Acton, Mass., for number one Baldwin apples.

—A barrel of dry wood shavings thrown into a hog-pen will absorb more wet than a cart-load of moist earth.

—Fruit trees have made a large growth this year and have the appearance of being in an unusually healthy condition.

—Apples keep best when cool and dry. Sudden changes of temperature induce the collection of moisture on the skin, which dissolves the delicate varnish with which the skin of the apple is covered, and it soon decays.

EXTRACTS AND REPLIES

"BLOODED" NATIVE COWS.

I saw in the last FARMER a brief statement of the product of a Jersey cow, owned by Mr. Daniel S. Brown, of Arlington, that made during four months of last year, from the first of June, an average of 9½ pounds butter per week. I now write to say that I have a native cow that is eight years old, and calved the last of last March, that made during four months of this year, from the first of June, an average of 10 4-9 pounds of butter per week, as near as we can estimate it. If any thing, it would exceed this rather than fall short of it. Most of this time she was kept in an ordinary pasture, and fed the amount of one quart of corn meal per day. During August and September she received a feed of fodder corn. If, in the first case, "blood" tells, does it not also in the second?

I have another native cow, seven years old, that calved a year ago last May, and again the first of last August, that gave an average of five quarts of milk per day, from the first of May till she calved again; and then gave an average of five quarts per day, besides what the calf took; but it was butchered at the age of four weeks and one day. The calf weighed 81 pounds dressed meat, and the cow gave an average of 14 quarts per day during September, and now gives nine quarts per day. She has been kept with, and fed the same as the other.

From my experience with native cows, I would say that they do not give large quantities of milk and little cream, but that they give fair quantities of milk, well interspersed with cream; and for butter will compare favorably with any other breed. One thing is certain, much depends upon care and keeping. We cannot get what we do not give.

Tyngsboro', Mass., Oct. 28, 1867. S. BARKER.

APPLYING COAL TAR TO BARN ROOFS.

In the NEW ENGLAND FARMER of Oct. 19, there is a communication from Mr. Stephen Chandler, wishing for information "as to time and manner of applying coal tar to the roof of a barn." There are two ways in which it may be done.

First. Drive two forked stakes into the ground, and lay a stick across, on which hang an iron pot, into which put the tar, and build your fire. When the tar is boiling, dip your shingles into the tar six inches, (weather end,) and spread them about in the sun to dry, and they are soon ready for the roof.

Second. After your roof is shingled, take a ladder and hook it to the ridge-board. Carry the tar up to the top, and pour it gently over the roof; let another person stand upon the ladder, with an old white wash brush, and as the tar flows down, brush it crossways of the shingles. The tar should be hot and the weather warm, in order to have the work done well.

One barrel of tar will be sufficient for a roof 25x40. Shingles tarred will last much longer than those laid without it, and it is strange that so few persons are willing to economize in this way.

THOMAS BRIDGE.

North Tewksbury, Mass., Oct. 29, 1867.

THREE GENERATIONS OF APPLES ON ONE TREE—WINTER PEARS.

Enclosed please find sample of my winter pears; also a sample of apples, name unknown to me. I raised only eleven apples this year of this kind that got ripe. Hope to raise more another year, for I think they are the best sweet apple I ever tasted. The tree was in blossom May, June, July, and August. I enclose specimens of the fruit from the blossoming of each of these four months. Perhaps you can give me a name for it. If you can

find any other town that can raise apples from the blossoms of four successive months in the year, I would like to hear from it. J. A. Ames.

Wilmington Station, B. & L. R. R., Oct. 19, 1867.

Remarks.—A dealer in fruit pronounces your apple to be the Orange Sweet. He may be correct, but in size of core, and some other peculiarities, it does not seem to us to correspond exactly with the descriptions given in the books of that variety. Freaks in untimely blossoming are not very uncommon with the apple tree; but it is seldom, we think, that such perfect specimens of four generations in one season are seen on one tree. The fruit from the May blossoming is mature, and measures some nine inches in circumference; that from the June blossoming is quite a respectable apple, measuring full five inches; that from the July bloom is nearly four inches round; while that started August first is full three and a half inches in circumference. For these interesting specimens, and for the box of winter pears, Mr. Ames will accept the thanks of the New England Farmer.

POTATOES, APPLES AND DROUGHT.

I planted some three or four pounds less than half a bushel of early Goodrich potatoes, about the middle of May, and in the fore part of September I dug 18 bushels of nice ones, at the rate of 300 bushels to the acre. We have cooked some of them and find them nice, either boiled or baked. The ground, which was a sandy loam, was ploughed last December; some coarse manure was spread on in the spring, and plastered both in the hill and after it was hoed the second time.

I also obtained three small potatoes from New Hampshire, by mail, of the Orono kind, and raised three pecks from them, without any manure, but plastered in the hill.

I raised 14 bushels of nice Ladyfinger potatoes from less than half bushel of seed, on a soil that was gravelly and too dry.

Among my Pound Sweets, was one that weighed 1 lb. 3 oz., and measured 14 inches around it, and the same the other way. The season has been very dry here this summer; the bottom of many wells having leaked out, at the lower corner.

H. Griffin.

Essex Junction, Vt., Oct. 29, 1867.

STEAMING FODDER.

Much has been said in agricultural papers during the last twelve months, about steaming corn buts, stalks, and poor hay for cattle in winter. But in no case have I seen the operation fully explained.

I would like to inquire through the columns of the Monthly New England Farmer, in cases where a tight box is used, how much water is used to a bushel of cut feed? Should the water be boiling hot or only warm? How much meal should be mixed with it to make it good as English hay: or if shorts are used how many? What is the *whole* manner of preparing it? Who can give the desired information, and oblige

Jesse B. Butterfield.

Tyngsboro', Mass., Nov., 1867.

Remarks.—In addition to the information which our correspondent will find in the statement of Wm. Birnie, of Springfield, Mass., in relation to his apparatus and his mode of "Cooking Food for Cattle," we copy the following particulars from a communication written by S. N. Thompson, of Southboro', Mass., for the *Country Gentleman*. Mr. T. has had five years' experience in steaming feed, and he expresses the opinion that, from the extra work, he can winter 40 cows on steamed feed for one-third less expense than on dry; can get at least one-quarter more milk, and keep them in as good thriving condition.

The plan which he at first adopted is described as follows:

Five years ago I prepared a steam box directly over the boiler in my barn cellar, made a wooden cover to the boiler, fitting it steam tight, and through rubber tubes conveyed the steam into a perforated iron pipe running the length of the steam box. I then put my cut hay, straw, &c., into the box, wetting it thoroughly as I put it in; if not thus wet the steam will dry it so as to destroy its nourishing qualities. After filling the boiler with water and making my connections, box and cover steam tight, lighted my fire and kept the water boiling briskly for about four hours, when I found the mass to be pretty thoroughly cooked, and of such nature that my cattle liked it exceedingly well By adding a liberal supply of corn meal and shorts when filling the box, you have a mass resembling in flavor a new made loaf of brown-bread, on which the cattle do very well, though the material cooked be of an inferior quality.

After pursuing this course one winter, and satisfying himself that he could make more milk from a fair quality of meadow hay, thus prepared, than from the best quality of upland hay fed dry; and that the addition of, say two quarts of meal, per cow, before steaming the mass, was far more beneficial than when the same amount was fed in connection with dry hay, he adopted a simpler process of preparing the feed, of which he gives the following description, and which he likes quite as well as the first.

I take a large feed box, with a tight cover, and into this I put my feed, wetting each layer with boiling water, shaking the hay so as to have each part thoroughly wet. I then tramp it down as solid as possible, put on another layer, and proceed as before till my box is filled. For my stock of 15 head I use 45 gallons of boiling water in mixing enough to last them two days The box should then be closed, while another boiler of water is being heated, when 45 gallons more is poured evenly over the mass the box closed, and allowed to stand about 12 hours before using. The feed is then softened, so as to be easily digested and of nearly the same flavor as when in its green state; and my cattle prefer even poor meadow hay, thus prepared, to the best English hay when fed dry.

After remarking that he had kept his stock for three winters on corn stover and meadow hay that his neighbors considered almost worthless, using meal, not to exceed one quart per day, to each cow, when not giving milk, and bringing them out in good condition, he states the following fact:

About the middle of April last, having my poor hay, for which I paid $13 per ton, (English hay being then worth $35,) I commenced feeding very nice early cut English hay, dry, to my milch cows, and to my surprise, I found that they decreased in their quantity of milk from one quarter to one-third, and I was not able to increase that quantity till they went to grass, though I doubled their quantity of grain.

NEW PLAN FOR FALL FEEDING.

We have avoided feeding our fields—grass fields—either in spring or autumn, preferring to feed from the barn when we could no longer keep our stock in the pasture. Our neighbors have practiced feeding their cattle in their fields, both in spring and fall, and some of them pretend to think that their

grass is *thicker* for it, and that where it is fed closely and by heavy animals, the worms do not injure the grass as they do where cattle are kept off. Will the farmers who have acres of grass destroyed by worms please make a note of this remedy, and see if the portions of their fields which escaped the depredations of the worms were not those where the cattle fed the most. After carefully considering the evidence in the case, we have concluded to adopt the fashions for once, and feed our fields this fall, and will report another season, if there is anything discovered worth a record. *We shall feed with a compost of soil mixed by hogs with stable manure.* F.

New Hampshire, Oct., 1867.

Remarks.—Until "F." takes out a patent for his invention, we suppose it is open to the whole world.

MEASURING HAY IN BULK.

I have seen statements in the Farmer of the number of cubic feet of a hay mow which are generally allowed to be equal to a ton. As I have forgotten the figures, you will oblige me and perhaps others by republishing the estimate.

Brighton, Mass., Nov., 1867. J. Lane.

Remarks.—The rule which we have published two or three times is, that *from four to five hundred cubic feet of a well packed mow of tolerably fine hay are equal to a ton.* In the Monthly Farmer for 1860, page 26, Thomas S. Fletcher of Reading, Vt., stated that "at the bottom of a large mow 400 feet will make a ton, and that one whole barnful that was weighed out averaged a little less than 500 feet to the ton." On the same page, Mr. M. J. Perkins, another of our correspondents, stated that farmers in his region estimate that from 400 to 500 cubic feet, according to the position in which the hay lies, is sufficient for a ton. Meadow and other coarse hay is lighter, will not pack as closely, and more feet must be allowed for it. Another correspondent of Hope, Me., writes that "a mow of hay that is well stowed, will weigh out a ton to every five hundred cubic feet; or, if it is of very fine quality from four to five hundred feet will make a ton."

On publishing the above, the *Country Gentleman* remarks that "This agrees with the report of one of our subscribers at the West, who found the lower layer of some three feet of a considerable bulk on a scaffold, to average 510 feet." Wm. J. Pettee, of Lakeville, Ct., says in the same paper that if the hay be closely pressed, as at the bottom of a bay, 450—if lightly, as on a scaffold or top part of a bay, 500 feet.

CARBON.

I see that our friend "R." criticises my criticism of his article on carbon, and while acknowledging the spirit of kindness with which I am met, must say I am not entirely satisfied with his explanation. Dr. J. L. Comstock, in his Introduction to Mineralogy, page 55, edition of 1848, says: "Carbon is found in abundance in the earth, being the chief element in the composition of coal. It is also found combined with iron, forming a *carburet* of that metal. The diamond is composed entirely of carbon." Without questioning the authority of Dr. Ure, may we not ask, does not the fact that Graphite gives nearly the same proportions of iron and carbon, the world over, prove incontestably that it is *not* an "accidental impregnation of iron?" One thing more, and I am done. This same Dr. Ure is not strictly exact in his statements, as quoted by "R." He says: "*In the diamond it is colorless.*" If he had said *generally* colorless, that would have hit the mark. Comstock—page 327, edition of 1848—describes diamonds as follows: "Colorless, or of a yellowish, bluish, yellowish green, clove brown, brownish black, Prussian blue, or rare red color," &c. Finally, where doctors disagree who can decide? Rusticus.

Ripton, Vt., Nov. 4, 1867.

Remarks.—It appears to us that our correspondents, substantially agreeing upon facts, are disputing mainly about words. In this, however, they have the example of distinguished controversialists in theology, politics, morals, &c., as well as in science. Perhaps both parties will thank us for appending Webster's definition, as found in the "Unabridged:" "Graphite; Carbon in one of its conditions, distinguished by its usually crystallizing in foliated six-sided prisms, though often massive, by its softness, its metallic lustre, and by leaving a dark lead colored trace on paper. It sometimes contains iron, but this is not essential. It is used for pencils, and is often called plumbago or *black lead.—Cleaveland.*"

GLADIOLUS.

We have had good luck with this beautiful flower this year. They come late, are very showy, and last a good while. They are easily cultivated and rapidly increase. But we made a great mistake, we fear, in setting our bulbs out *scattering*, last spring. We have just gathered our bulbs in great abundance and fine condition, and are satisfied that another spring to make the finest display, we should set them out in clumps. Can any one tell us how near to set the bulbs to each other to have them do the best?

November, 1867. Inquirer.

Remarks.—We have had very good success with this beautiful flower, which we planted in beds, placing the bulbs in rows eight inches apart one way and nine inches the other. A friend plants four to six about a stake, so that they are six or eight inches apart. We have found them very easy of cultivation, and look upon them as indispensable to the flower garden. Our friend will find a bed four by eight or ten feet in dimensions, the bulbs planted as above, and staked with sticks four feet long and three-fourths of an inch square, will make him as fine a show as he can desire.

IS LABOR DISREPUTABLE?

What is there to keep the boys on the farm, and the girls in the kitchen? Is farming less respectable than it used to be, or has labor become a burden and a disgrace?

> "Ill fares the land, to hastening ills a prey,
> When wealth accumulates and men decay."

I look for some advantage from the college, if it shall not make the students despisers of labor. We cannot all be farmers. We must have consumers as well as producers; but what right have the former to despise the latter, because these eat what those have raised. Benj. G. Kimball.

Ladies' Department.

From the Lover's Diary, by Alice Cary.

BY THE SEASIDE.

Come out to the side of the sea, my love,
Come out to the side of the sea;
The sun is set, and the stars are met,
And the winds and the waves agree;
But star so bright, nor wave so light,
Brings pleasure or peace to me,
O come, for I sit and wait, alone,
On the rocks by the side of the sea!

I am going down in my memory
To the blessed long ago,
When the golden ground of the buttercups
Was dashed with the daisies' snow.
And I'm thinking of all you said to me,
And if it were true or no,
While I watch the tide as it runs away
From the beach so black and low.

If I should die, my love, my sweet,
Die of your smile forlorn,
Bury me here by the side of the sea,
Where all my joy was born.
Where the waves shall make my lullaby,
And the winds from night till morn
Shall say to the rocks, "He is gone to sleep
Where all his joy was born."

HOUSEHOLD ECONOMY.

CONTRIBUTED FOR THE NEW ENGLAND FARMER.

Sweet Apple Cakes.

Five cups of sour milk; five cups of corn meal; two and a half tea spoonfuls of soda; half a cup of molasses; a teaspoonful of salt, and about two quarts of sliced sweet apples. It requires a very hot oven, and a good deal of baking.

Tapioca Pudding.

Put three table-spoonfuls of tapioca in soak in cold water over night. In the morning, add a quart of *boiling* milk, the yolks of three eggs and a cup of sugar, leaving out two table spoonfuls of the sugar to beat with the whites of the eggs for a *top* to the pudding after it has boiled as much as a soft custard. Flavor with vanilla. Brown it lightly in the oven. Serve cold.

Chocolate Caramels.

One cup of milk; two cups of sugar; two cups of molasses; one cake of chocolate grated fine. Boil till it candies. Pour out on a flat dish and cut in squares.

Cocoanut Cakes.

One pound of sugar; one-half pound of butter; three-fourths pound of flour; six eggs; one cocoanut grated fine without the milk. Beat the yolks and whites of eggs separately. Add the flour and cocoanut just before baking. If you please, you can bake one-fourth of the grated cocoanut in the cake, and after it is cool, put the rest with powdered sugar on the top for a frosting.

Muffins.

For tea, make a sponge about eleven o'clock, by dissolving a yeast cake in a little warm water and flour. At two, add one pint of milk; two eggs; a quart of flour and a tablespoonful of butter. Warm the milk enough to melt the butter; mix thoroughly and keep in a warm place to rise. Bake in rings.

Orange Ice.

Express the juice of six large oranges; strain, and add a quart of cold water; make it *very* sweet; beat the whites of four eggs to a stiff froth; pour the whole into a "freezer" properly prepared, and freeze *immediately before it is wanted.*

For Chapped Hands.

Three ounces white wine vinegar; three ounces lemon juice; one-half pint white brandy. Rub this liquid on the hands frequently, especially after washing with soap. Mary.

Parsonfield, Me., Oct. 30, 1867.

Cracker Mince Pies.

Take three large crackers; one cup of vinegar; one cup of molasses; two cups of sugar; a piece of butter the size of an egg; raisins and spice to your taste. This will make three pies.

Mother's Cookies.

One and one-half cup of white sugar; the whites of two eggs; one cup of thick sour cream; one-half teaspoonful saleratus; nutmeg or spice to your taste.

Lemon Pie.

One lemon sliced fine; one egg; one cup of sugar; one-half cup of water; one table spoonful of flour.

Steamed Pudding.

Take two cups of sour milk; one-half cup of sour cream; one-half cup of sugar or molasses; one cup of raisins (or dried berries); one teaspoonful of saleratus; spice to your taste, and a little salt; stir in flour until it is as thick as common gingerbread; steam one hour and a half. To be eaten with sour sauce or sweetened cream.

Snow Balls.

One cup of sugar; two eggs; four table spoonfuls of milk; one teaspoonful of cream of tartar; one of soda, if the milk is sour; spice to your taste; mix them hard enough to roll out; cut with a small cake cutter, and fry in hot lard; then dip them in the white of an egg, and roll in powdered loaf sugar till white.

To Take Ink Spots out of Linen.

Dip the ink spots in melted tallow; rub until the tallow comes out, and the ink will come out with it. Vermont Farmer's Wife.

Weston, Vt., October, 1867.

DOMESTIC RECEIPTS.

Brown Chicken Soup.—Cut up a nicely-dressed chicken; put it in the pot with water to cover it, which must be measured, and half as much more added to it before the soup is dished. Keep it covered tight, boiling slowly, and take off the fat as fast as it rises. When the chicken is tender, take it from the pot and mince it very fine; season it to the taste, and brown it with butter in a dripping pan. When brown, put it back in the pot. Brown together butter and flour, and make rich gravy, by adding a pint of the soup; stir this

in the soup, and season it with a little pepper, salt, and butter. Be careful the chopped chicken does not settle, and burn on the pot. It will be well to turn a small plate on the bottom of the kettle to prevent this. Toast bread quite brown and dry, but do not burn it, and lay the toast in the tureen, and serve it with the soup; stir the chicken through it, and pour it in the tureen.—*Godey's.*

Potato Patties.—Butter some small pattypans; strew bread-crumbs over the insides and fill them with some nicely-mashed potatoes, flavored with either mushroom catchup, grated lemon-peel, or savory herbs chopped fine; add sufficient lard or fresh butter, and sift more bread-crumbs on the tops; place them in an oven till properly browned, lift them out of the pattypans to serve. *Note:* a very thin puff paste may line and cover the patty-pans, and the bread-crumbs be omitted.—*Godey's.*

Eggs with Onions.—Boil some eggs hard, preserve the yolks whole; cut the whites into slips, and add them to a few small onions which you have first fried in butter: give all a stir up, pour off the superfluous fat; dredge in a little flour; moisten it sufficiently with gravy; add seasoning to taste; let it come to a boil; put in the yolks, and, when they are quite hot, serve.

Starching Cuffs and Collars.—After washing and rinsing them, let them dry as if for ironing. Having made some starch a little thicker than cream, put them in, wring them out again, let them dry before the fire until they are fit for ironing, roll them in a cloth, and iron. To give them a good gloss, take the end of a wax candle and stir it through the starch when quite hot, and do not let the iron be too hot. A little salt put into the starch when hot will prevent the iron from sticking, and some soap rubbed on it before using will answer the same purpose.

Flaxseed Syrup.—This excellent remedy for a cough is made thus:—Boil one ounce of flaxseed in a quart of water for half an hour; strain and add to the liquid the juice of two lemons, and half a pound of rock candy. If the cough is accompanied by weakness and a loss of appetite, add half an ounce of powdered gum arabic. Set this to simmer for half an hour, stirring it occasionally. Take a wine-glassful when the cough is troublesome.

Cure for Corns.—The following receipt is vouched for as a sure cure for corns:—"Put the feet for half an hour, two or three successive nights, in a strong solution of soda. The alkali dissolves the indurated cuticle, and the corns fall out spontaneously; leaving a small cavity, which soon fills." An exchange says:—"We know the above remedy for corns to be effectual. We have tried it, and found it acts like magic. But we do not think a strong solution is desirable. We know of a friend who tried the remedy on our recommendation, but he made the solution so strong that, with the corns, it took off a portion of the skin on the foot. From one to two table-spoonfuls soda in a small foot-tub of hot water is sufficient to remove the corns, by letting the afflicted member remain in it ten or fifteen minutes."

Mustard Plasters.—By using syrupor molasses for mustard plasters, they will keep soft and flexible, and not dry up and become hard, as when mixed with water. A thin paper or fine cloth should come between the plaster and the skin. The strength of the plaster is varied by the addition of more or less flour.

To Wash Merinoes.—An old merino may be made to look as good as new by first ripping to pieces the skirt, and afterwards washing each breadth separately in warm suds, being careful to rinse only in clean warm water suds. Cold water after warm will shrink any kind of woolen goods. Iron while quite damp on the wrong side. Afterwards fold once double on the right side, placing over it a clean newspaper, and iron with a very hot flat iron, in this way making the seam fold in al new double folded goods.

WOMEN AND THE FASHIONS.

It is the eternal, heaven-decreed, anti-Mill law that women should be dependent, and poor, and vain; and their dependence, their poverty, and their vanity make them all the more adorable, because we know that these spring, not from selfishness, but from desire to give delight to men. They are deliciously poor. They will borrow sixpence from you without shame; and if they have fifty thousand pounds, they will come and cast the money into your lap and say, "There, dear; pay off the nasty mortgages, and then take me out for a walk." They only want to be taken out for a walk to look at the bonnet shops. If there be cash about, they will have a bonnet—the best that money can buy. If the funds be at low water, they will "take it out of the bonnets" by looking at them. I have known a "nice woman" who had not the slightest hesitation in eating partridges at twelve-and-sixpence a brace, but who was perfectly content to dine on a basin of water gruel—so long as you took her out for a walk. You must take her out for a walk. The nice woman forgives everything but neglect. Pay her attention, and she will forgive, forgive, forgive for ever and ever. Neglect or scorn her, or decline to admire the new collar and cuffs she has bought for one-and-eleven-pence-halfpenny in Newington Causeway, and she will hate you worse than Mrs. Potiphar hated Joseph. What is the usual complaint of an ill-used woman against a man? It is not "He beats me;" "he swears at me;" "he has spent all my money." It is "he doesn't care for me." The woman likes to be poor. She likes to beg. She likes to have nothing, and that everything should come from you. She would nibble the bread out of your mouth if you would let her. She triumphs in "carneying" you out of a five-pound note. I do verily believe that she will cheat you a little if she has a chance. If you are wealthy and generous, you may cover her with all the gems Mr. Hancock has to sell. You may pour on, and she will endure. But fall you into poverty—be you proscribed, be unhappy, be distressed, and away go the diamonds and the cashmeres to mine uncle—away go vanity and caprice; and you have by your side a patient little soul in a cotton print, who will wash and mangle and iron and starch—who will peel potatoes and broil red herrings—who will stitch her fingers to the bone in the making of soldiers' jackets to buy your bread. I believe that Zenobia, Queen of Palmyra, would do this; and "Nancy," the burglar's sweetheart in Oliver Twist, could do no more. It is the nature of womankind. There are exceptions to the rule; but the exceptions are scarcely women.—*Belgravia for October.*

Favorite Days for Marriage.—The latest reports of the Registrars-General of England and Scotland show that no two nations could differ more widely than do the English and the Scotch with regard to the choice of days of the week for marriage. The Scottish report states that the favorite day for marriage in Scotland is the last day of the year, provided it does not fall on Saturday or a Sunday. No marriages are celebrated on Sunday in Scotland, while in England it is the favorite day of the week for marriage, thirty-two per cent. of the marriages being contracted on that day. Monday is a favorite day in both countries. Saturday, in England, is the third day of

the week in order of selection for marriage, seventeen per cent. occurring on that day; but in Scotland, no true Scot will marry on a Saturday, nor, indeed, begin any work of importance. With the Scot, Saturday is an unlucky day for marriage, and he is impressed with the superstitious belief that, if he married on a Saturday, one of the parties would die before the year expires, or that, if both survived, the marriage would prove unfruitful. Hence it happens that Sunday or Saturday, the two favorite days for marriage in England, are blank days for marriage in Scotland. Friday is the day on which the English do not marry, but in Scotland, it is one of the favorite days for marriage.

THE FASHIONS.

The races at Jerome Park and the summer-like weather of the past week brought out the belles of the metropolis in the brightest and gayest of fall toilettes. It is an agreeable feature of the independence and good taste of American ladies to see that our *modistes* are obliged to modify and harmonize the extreme peculiarities of the fashions dictated in Paris. The prevailing color in dresses and bonnets among the fair patronesses of Jerome Park was blue, and interminable trails mingled with the coquettish short dresses that came into vogue last spring. The becoming little Fanchon still graces fashionable heads and nestles beside preposterous chignons. Ornaments of gold are much used, but do not necessarily portend a return to specie payments on the part of the wearers' husbands. Satin and velvet trimmings are seen on many of the crape and tulle hats, and there are already indications of a return to crowns and curtains in the matter of bonnets. Lace strings are extremely fashionable, and streamers of a narrow ribbon wave in the wake of every belle. There is little novelty in cloaks to be seen out doors yet, as the Indian summer still encourages handsome short suits, with elaborately ornamented overskirt and bodies of every possible pattern. Jet and lace will be the principal materials in trimmings this season. On evening dresses bands and bows of velvet form strange geometrical figures. There is a rumor that ribbons of immense width will be worn this season, not only as sashes, but also in the hair, on dresses, and tied around the upper part of the sleeve. The Bismarck brown is still preferred in toilettes, but it cannot hold sway very long, for a more unbecoming color never emanated from the sanctum of Madame Fashion. About the beginning of next month the winter styles will be ready for the inspection and selection of the ladies, and Broadway will again witness the excitement of opening day. The fickle goddess that rules *modistes* and their customers is already preparing strange surprises for her subjects in Gotham. —*New York Herald.*

The Spinet.—Any lady who will take the trouble to mount to the fourth story of the Messrs. Chickering's piano store in the city of New York, may see such a spinet as Mrs. Washington, Mrs. Adams and Mrs. Hamilton played upon when they were little girls. It is a small harp-shaped instrument on legs, exceedingly coarse and clumsy in its construction,—the case rough and unpolished, the legs like those of a kitchen table, with wooden castors such as were formerly used in the construction of cheap bedsteads of the "trundle" variety. The keys, however, are much like those now in use, though they are fewer in number, and the ivory is yellow with age. If the reader would know the tone of this ancient instrument, he has but to stretch a brass wire across a box between two nails, and twang it with a short pointed piece of quill. And if the reader would know how much better 1867 is than the year 1700, he may first hear this spinet played upon in Messrs. Chickering's dusty garret, and then descend to one of the floors below and listen to the round, full, brilliant singing of a Chickering grand, of the present illustrious year. By as much as that grand piano is better than that poor little spinet, by so much is the present time, is better than the days when Louis XIV. was king. If any intelligent person doubts it, it is either because he does not know that age, or because he does not know this age.—*Parton.*

Female Logic.—As a young woman was walking alone one evening, a man looked at her, and followed her. The young woman said, "Why do you follow me?" He answered, "Because I have fallen in love with you." The woman said, "Why are you in love with me? My sister is much handsomer; she is coming after me; go and make love to her." The man turned back and saw a woman with an ugly face; being greatly displeased he turned to the first woman and said, "Why did you tell me a falsehood?" The woman answered, "Neither did you speak the truth, for if you were really in love with me, why did you leave me to look upon my sister?"

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